Exhibit 4

Outlook

Re: B&G NSO dispersal habitat analysis

From Foster, Christopher C <cfoster@blm.gov>
Date Tue 8/6/2024 1:56 PM
To Price, Amy L <amy price@fws.gov>

no fed lands

Christopher C. Foster
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From: Price, Amy L <amy_price@fws.gov>
Sent: Tuesday, August 6, 2024 1:36 PM
To: Foster, Christopher C <cfoster@blm.gov>
Subject: Re: B&G NSO dispersal habitat analysis

Thank you Chris.

I thought I had seen a legend & was surprised when I didn't find one there. What do the white hexs represent?

Amy L. Price (she/her: why is this important?)

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"Let the beauty of what you love be what you do." - Rumi

From: Foster, Christopher C <cfoster@blm.gov>
Sent: Tuesday, August 6, 2024 1:22 PM

To: Price, Amy L <amy_price@fws.gov>
Subject: Re: B&G NSO dispersal habitat analysis

That will be the dispersal breakdown is the same as in Figure 5. The purpose of the figure was to just illustrate the two hexes that exhibited changes in dispersal conditions from above to below 40%

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From: Price, Amy L <amy_price@fws.gov>
Sent: Tuesday, August 6, 2024 12:55 PM
To: Foster, Christopher C <cfoster@blm.gov>
Subject: B&G NSO dispersal habitat analysis

Hey Chris-

I just noticed that Figure on p. 69 of the B&G BA doesn't have a legend depicting what the each of the hexagon colors reference. I believe it's a gradient of % of mean dispersal-quality habitat? Could you please provide that when you get a chance.

Thanks!

Amy L. Price (she/her: why is this important?)

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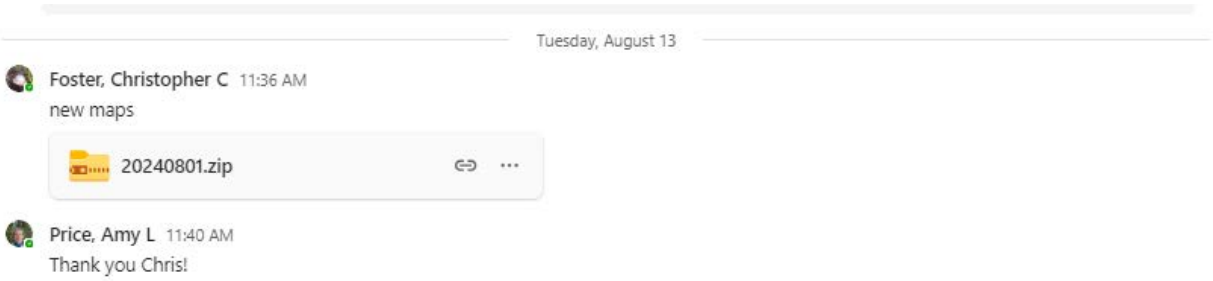
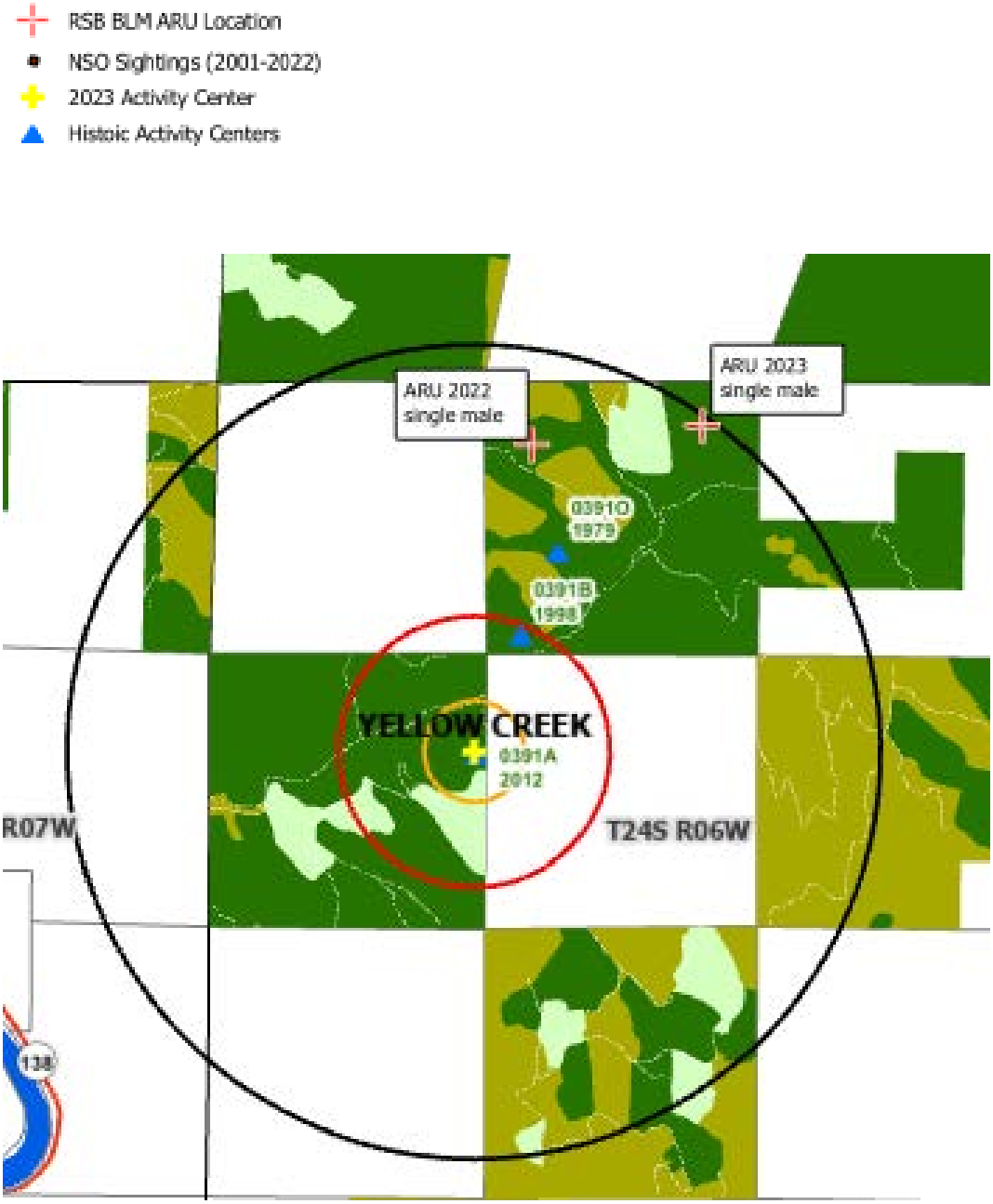

Tuesday, August 13
Foster, Christopher C 11:36 AM
new maps
20240801.zip
Price, Amy L 11:40 AM
Thank you Chris!

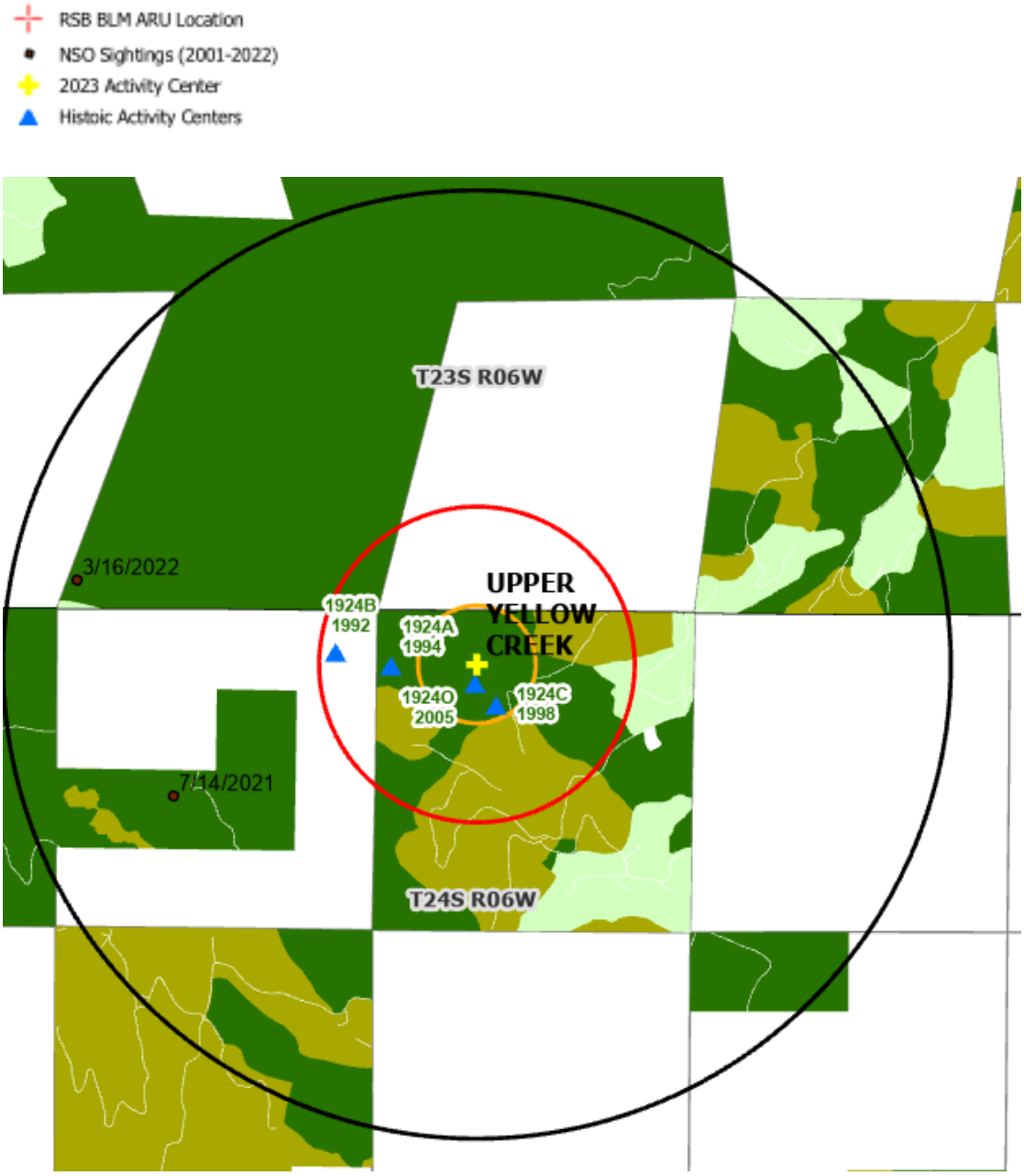
YELLOW CREEK (MSNO 0391)

- No call-back detection 2018-2022
- ARU (BLM) detections (YEC 2 and YEC 3), stations operated in 2022 & 23
    - 2022 – single male,
    - 2023 – single male,



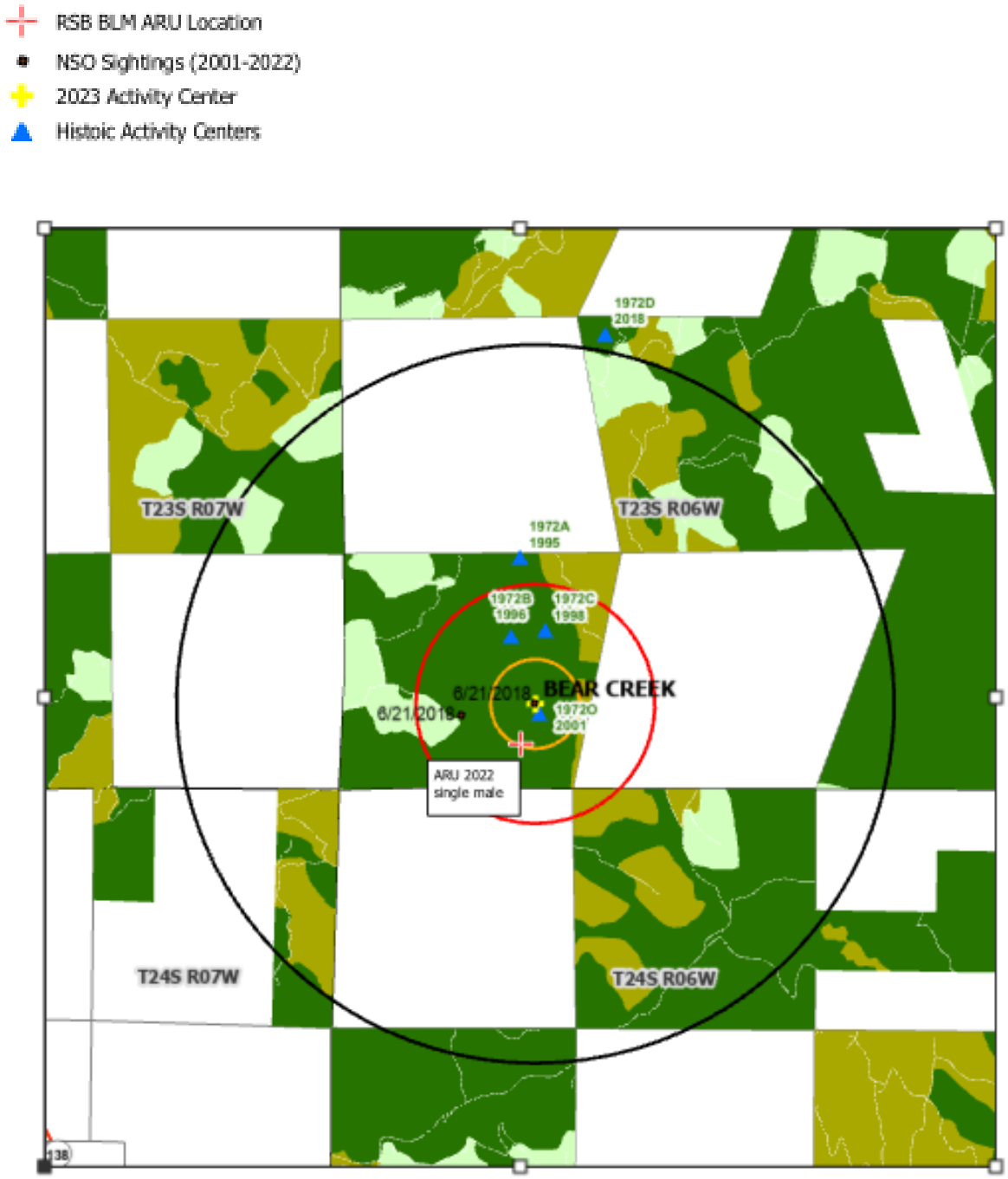
UPPER YELLOW CREEK (MSNO 1924)

- Call-back detection in 2021, unk sex, unk spp
- Call-back detection in 2022, single-male



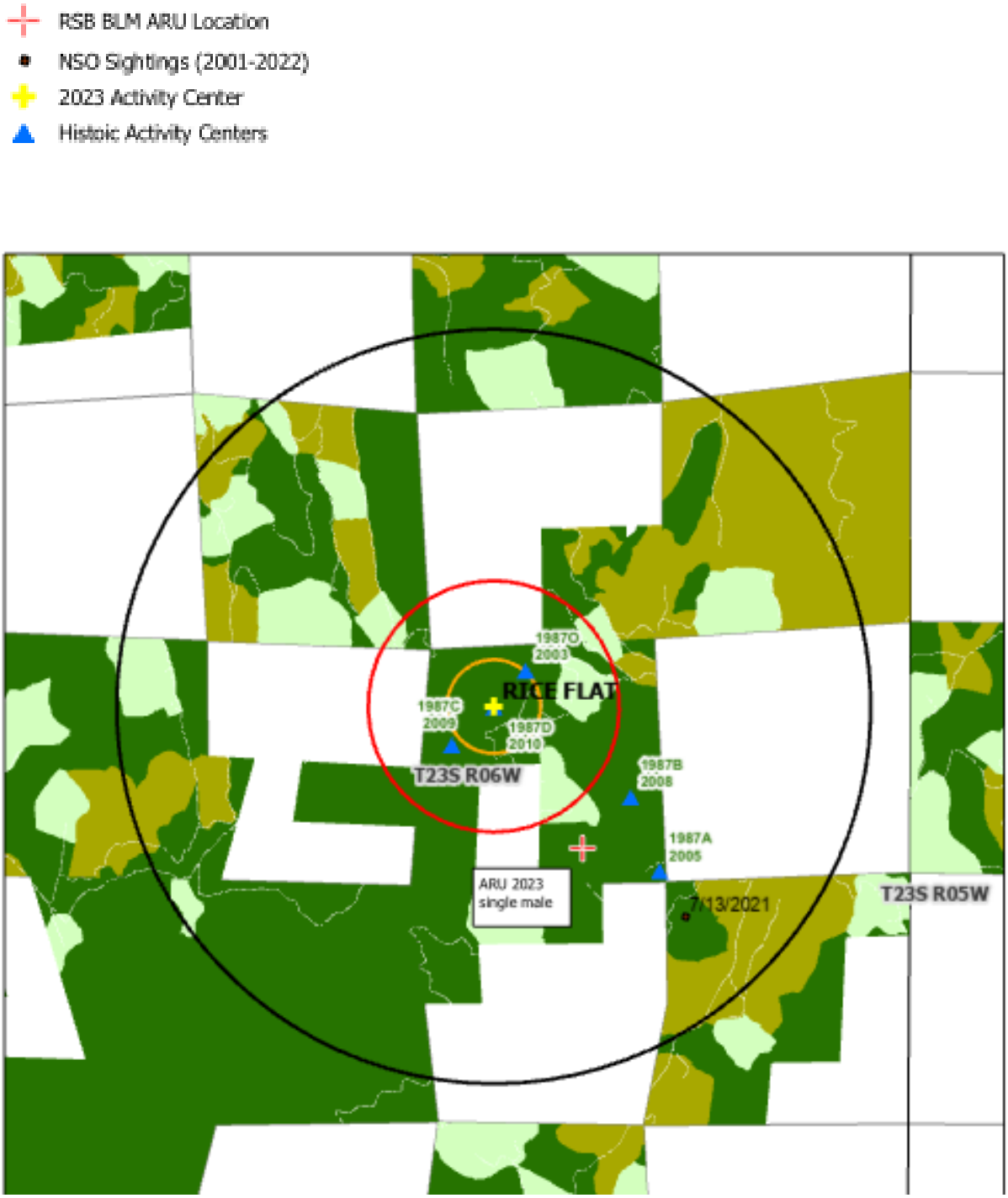
BEAR CREEK (MSNO 1972)

- Pair in 2018
- BLM ARU (YEC 1) 2022 single-male detection



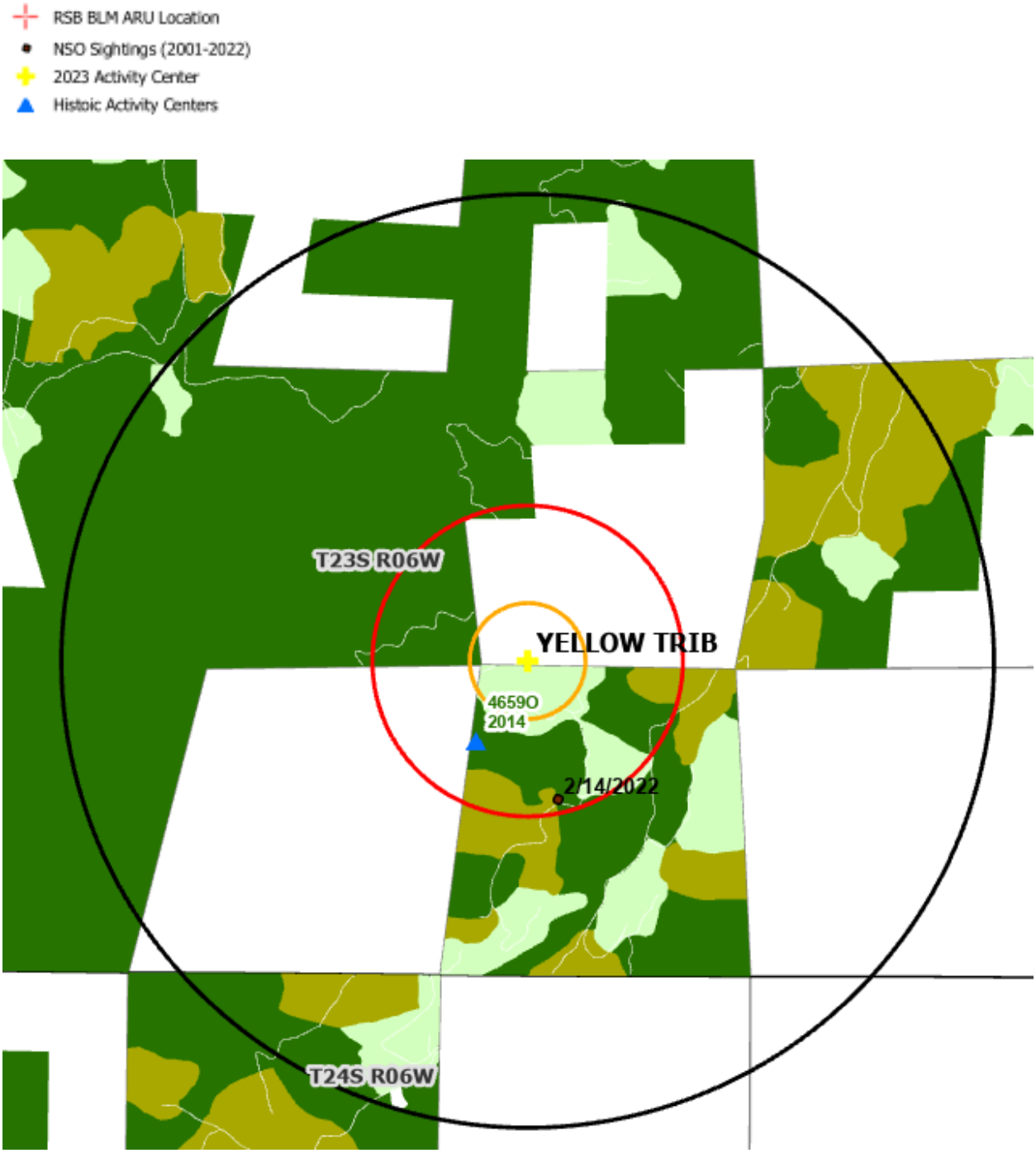
RICE FLAT (MSNO 1987)

- Call-back detection 2021, single female
- BLM ARU (YEC 1) 2023 single-male detection



YELLOW TRIB (MSNO 4659)

- Call-back detection 2022, single male



APPENDIX 2 – Project Design Features and Best Management Practices

Excerpt from Appendix B in the Blue and Gold Harvest Plan Environmental Assessment.

Project design features (PDFs) are an integral part of each Action Alternative and serve to minimize or prevent the spread of noxious and invasive plants, and lessen impacts of activities on cultural, fisheries, soil, water, wildlife, and botanical resources resource. In addition to best management practices (BMPs) and legal requirements, these measures would be applied during implementation. To minimize or prevent sediment delivery to streams and comply with the Clean Water Act of 1972 and its revisions, the BMPs would be incorporated into the project design. Implementing these BMPs and others found in the NCO ROD/RMP (pp. 143-164) would disconnect road surface runoff from stream channels and minimize or reduce the conveyance and delivery of sediment to the waters of the United States (BLM, 2012). It is not intended that all of the BMPs listed would be selected for any specific management action. Each activity is unique, based on site-specific conditions and the selection of an individual BMP or a combination of BMPs and measures to become the BMP design. Forest road engineers and aquatic staff select the appropriate BMPs as part of the road construction, renovation and maintenance plans. The most common BMPs for disconnecting road related sediment delivery are listed below.

Table 1. Project Design Features and BMPs

Criteria Number	Objective	Design feature	Land use allocation, units, or activity type
Noxious and Nonnative Invasive Plant Species Control Measures			
1.	Prevent the introduction and spread of noxious weeds and invasive plants	Steam clean or pressure wash equipment used in logging and road construction prior to entering BLM-administered lands to remove soil and materials that could transport weed propagules (e.g. seeds, root fragments). Off-road equipment removed from the contract area during the life of the contract must be re-cleaned before re-entry into the contract area. *BLM Manual 9015: Integrated Weed Management (1992); NCO ROD/RMP* BMP SP 03 (2016); *Roseburg District Integrated Weed Control Plan Environmental Assessment* No. OR-100-94-11 (1995)	Prior to moving equipment onto BLM land
2.	Prevent the introduction and spread of noxious weeds and invasive plants	Schedule timber harvest activities in uninfested timber sale units prior to timber sale units containing noxious weed infestations. If infested areas are harvested first, equipment would be washed prior to moving from infested areas to uninfested areas. Conforms with NCO ROD/RMP (2016) management objectives for Invasive Species.	All treatment areas
3.	Prevent the introduction and spread of noxious weeds and invasive plants	Where practicable, seed and mulch disturbed areas where natural regeneration is unlikely to prevent weed establishment with native grass seed or revegetate with native plant species where natural regeneration is unlikely to prevent weed establishment, where practicable. *Roseburg District Integrated Weed Control Plan Environmental Assessment* No. OR-100-94-11 (1995), p. 5	All treatment areas

4.	Prevent the spread of noxious weeds and invasive plant species	Existing infestations of priority noxious weed species would be prioritized for treatment through the annual weed treatment plan. Treatment would occur prior to timber harvest operations and road renovation/construction as part of implementation. *Roseburg District Integrated Weed Control Plan Environmental Assessment* No. OR-100-94-11 (1995), p. 3	All treatment areas
5.	Prevent the spread of noxious weeds and invasive plant species	Treatment units and new road construction lacking current botanical surveys will be surveyed for weed species prior to project implementation. Any List A weeds found on these surveys will be treated prior to project implementation or flagged and avoided. *BLM Manual 9015: Integrated Weed Management (1992)*, p. 19-20.	All treatment areas
6.	Prevent the spread of noxious weeds and invasive plant species	BLM will conduct post-treatment monitoring for a minimum of three years, as funding and staffing allows, to implement management measures to identify new invasive plant populations and to control new and existing weed populations. *BLM Manual 9015: Integrated Weed Management (1992)*, p. 8-9.	All treatment areas
7.	Prevent invasion of noxious weed and invasive plant species into meadow habitats	BLM will treat noxious weed species within and adjacent to at-risk shallow soil meadow habitat. BLM will conduct post-treatment monitoring for a minimum of three years at these locations. *BLM Manual 9015: Integrated Weed Management (1992)*, p. 8-9, *NCO ROD/RMP* BMP SP 03 (2016); *Roseburg District Integrated Weed Control Plan Environmental Assessment* No. OR-100-94-11 (1995) p. 86 and 95.	T23S-R6W-S27, T23S-R6W-S28, and T23S-R6W-S29
Cultural Resources			
1.	Protect cultural resources	If cultural and/or paleontological resources (historic or prehistoric site or object) are discovered during project activities, all operations in the immediate area of such discovery would be suspended until an evaluation of the discovery can be made by a BLM archaeologist or BLM contracted archeologist to determine appropriate actions to prevent the loss of significant cultural or scientific values.	All treatment areas
2.	Protect cultural resources	Known cultural and paleontological resources would be buffered from harvest activities and all associated actions or excluded from harvest unit boundaries.	All treatment areas
Fisheries			
1.	Minimize water quality threats.	No log hauling on native surface roads or harvest equipment off existing roads would occur during the wet season (mid-October – mid-May); these dates may be extended or shortened based on weather and road conditions.	All haul routes
2.	BMP R 13	Use temporary sediment control measures to slow runoff and contain sediment from road construction areas. Remove any accumulated sediment and the control measures when work or haul is complete.	All road construction near streams where sediment would be expected to reach the stream

3.	BMP R 17	When installing a new culvert or replacing culverts in streams containing native migratory fish, install culverts consistent with National Marine Fisheries Service guidelines for salmonid stream crossings.	All road activities needing culvert work
4.	BMP R 23	Utilize stream diversion and isolation techniques when installing stream crossings	All roads where stream crossing is needed
5.	BMP R 48	Conduct all nonemergency in-water work during the ODFW instream work window (July 1 - September 15)	For work in fish bearing streams
6.	BMP TH 03	Full suspension yarding would be required over all stream channels. Yard away from streams where possible. Where not practicable, fish biologists/hydrologists would be consulted to ensure resource damage is minimized.	All harvest units and road activities
7.	Restrict sediment delivery to streams	Following road renovation actions, but prior to wet season haul, areas of potential sediment delivery (stream crossings) would be inspected by BLM fisheries, hydrology, and/or engineering staff to determine if additional sediment control measures are warranted. These measures could include seasonal suspension of haul, or installation of such devices as silt fences, straw bales, geofabric rolls, or similar measures.	Stream crossings with road renovation
8.	Restrict sediment delivery to streams and protect coho critical habitat	Road conditions within Riparian Reserves and/or critical habitat for Oregon coast coho salmon would be periodically inspected by a BLM fisheries biologist, hydrologist, and/or engineer to evaluate the effectiveness of sediment control measures. If improvements are required to increase their effectiveness, these actions would be implemented as soon as practicable.	Harvest units adjacent to streams and/or coho critical habitat
9.	Restrict sediment delivery to streams and protect coho critical habitat	The contract administrator would suspend operations before and after periods of substantial rainfall that would result in road surface degradation, causing delivery of generated sediment from log haul to stream channels and/or critical habitat for Oregon coast coho salmon.	Harvest units adjacent to streams and/or coho critical habitat
10.	Maintain/promote fish habitat	Trees cut for yarding corridors, skid trails, road construction, road maintenance, and road improvement within the inner or middle zones would be retained in the adjacent stand or moved for placement in streams for fish habitat restoration (NCO ROD/RMP, p. 68).	Activities in the RRD inner and middle zones excluding thinning and fuels reduction.
Soils			
1.	Minimize soil disturbance	Equipment would be capable of maintaining a minimum one-end log suspension in all cable areas. For thinning units, have a minimum of 75 feet of lateral yarding capability. If necessary, contract requirements may specify the type of logging carriage used and/or require intermediate support.	Cable yarding
2.	Minimize soil disturbance in Riparian Reserves	Yarding corridors in upland thinning units and in, or through, Riparian Reserves would be pre-designated and a maximum of 20-feet in width, in a manner approved by the contract administrator.	Cable yarding

3.	Protection of meadows; minimize soil disturbance to meadows. Limit detrimental soil disturbance.	Minimize disturbance to natural meadows. Designate these areas as non-harvest/leave areas. Locate landings in between meadows where possible. If yarding through meadows is essential for timber harvest activity: • Require a minimum of 75 feet lateral yarding capability to reduce the number of yarding corridors through the meadows. • Do not allow yarding unmerchantable material (YUM yarding) to reduce the amount of yarded material through the meadows. • Place appropriate erosion control (water bars, coir logs, mulch mats, for example) on yarding corridors located in meadows to minimize additional damage. • Conifers would not be planted within the meadows consistent with Botany 4.	Meadows in T 23 S., R 6 W., NE ¼ Section 27 and N ½ Section 29. Additional areas may be identified during implementation.
4.	Minimize soil disturbance	Landings in thinning units would be located at least 150 feet apart, to the greatest extent possible.	Cable yarding
5.	Protect water quality. Minimize sediment delivery to streams	Completed cable yarding corridors that are near or crossing stream channels within Riparian Reserves, or hydrologically connected to ditch lines would be water-barred and have slash placed over them prior to winter rains.	Cable yarding
6.	Minimize soil compaction and erosion	Processors and harvesters (which do not stay on designated skid trails) would travel over a slash mat created from cutting and limbing the harvested trees.	All ground based harvest
7.	Reduce soil compaction and displacement	Restrict mechanized equipment used for piling fuels and slash to roads, landings and designated skid trails, as much as practicable.	All ground based harvest units with fuels treatments
8.	Minimize soil disturbance and subsequent erosion	Install water bars and place slash/mulch in cable yarding corridors that have soil gullying or trenching deeper than 2 feet for longer than 50 feet or deeper than 1 ½ feet for longer than 100 feet, on steep slopes 60 percent or steeper, to control surface erosion and reduce potential for channeling water.	Cable harvest units with very severe erosion hazard rating and /or high amounts of sensitive soils for burning (Category 1 soils).
9.	BMP TH 01	Design yarding corridors crossing streams such that the corridors are perpendicular to the orientation of the streams, as is practicable	Cable yarding
10.	BMP TH 02	Directionally fall trees to lead for skidding and skyline yarding to minimize ground disturbance when moving logs to skid trails and cable yarding corridors.	Cable yarding and ground based skidding
11.	BMP TH 08 and 12	Limit ground-based yarding equipment to designated skid trails, using pre-existing trails to the greatest extent practicable. Limit mechanized equipment used for felling to one pass off of skid trails, roads and landings. Feller bunchers will be required to stay on designated roads, landings and skid trails in ground based harvest areas where the harvest area has moderate to high amounts of clay and low rock content. Limit designated skid trails for thinning and regeneration to less than or equal to 15 percent of the	All ground based harvest units and fuels treatments

		harvest unit area. Incorporate existing skid trails and landings where feasible, into a designated trail network for ground-based harvest equipment, with proper spacing of skid trails, skid trail direction and location. Space skid trails at least 150 feet apart, or average 150 feet apart.	
12.	BMP TH 07	Equipment operators would avoid using equipment in perennially wet areas.	All ground-based harvest
13.	BMP TH 09	Limit skid trails and skid roads to single width, a maximum of 14 feet wide. Where multiple machines are used, provide a minimum-sized pullout for passing.	All ground-based harvest
14.	BMP TH 10	Ensure leading end of logs is suspended when skidding in ground-based skidding.	All ground-based harvest
15.	BMP TH 11	Limit ground-based equipment to the dry season, typically May 15 through October 15. The operating season may be shortened or extended, dependent on weather conditions, when soils are at their driest and least susceptible to compaction. Generally, soils will be at or below 25 percent by weight in water content, before allowing ground-based yarding operations.	All ground-based harvest
16.	BMP TH 13	Limit the use of non-specialized skidders or tracked equipment to slopes less than 35 percent except when using previously constructed trails or accessing isolated ground-based harvesting areas requiring short trails over steeper pitches.	Ground based harvest units with slopes greater than 35 percent
17.	BMP TH 14	Limit the use of specialized ground-based mechanized equipment (those machines specifically designed to operate on slopes greater than 35 percent) to slopes less than 50 percent except when using previously constructed trails or accessing isolated ground-based harvesting areas requiring short trails over steeper pitches.	Ground based harvest units with slopes greater than 35 percent
18.	BMP TH 18	Subsoil skid trails, landings, or temporary roads where needed to achieve no more than 20 percent detrimental soil conditions, and minimize surface runoff, improve soil structure, and water movement through the roadbed. See also R 91-92.	All ground-based harvest
19.	Reduce soil compaction and displacement and minimize soil erosion and surface runoff. BMP TH 16, 17, and 19	Skid trails would be water-barred according to BLM standards where necessary. Skid trails would be winterized, prior to the rainy season, as necessary to prevent chronic erosion.	All ground-based harvest
20.	BMP TH 22	Maintain at least the minimum percent of effective ground cover needed to control surface erosion, following forest management operations. See Table C-3 of the NCO ROD/RMP, p. 161	All harvest units and fuels treatment units
21.	Minimize soil disturbance	Limit burning to when large fuels, >12” diameter, are moist to reduce intensive soil heating . Limit broadcast burning to when soils are moist to reduce soil heating from broadcast burning.	All fuel treatment units.

22.	BMP F05 pp.163	In broadcast burning, consume only the upper horizon organic materials and allow no more than 15 percent of the burned area mineral soil surface to change to a reddish color.	All fuel treatment units.
23.	BMP F07 pp.163	Avoid creating piles greater than 16 feet in height or diameter. Pile smaller diameter materials and leave pieces >12" diameter within the unit. Reduce burn time and smoldering of piles by extinguishment with water and tool use.	All forest management operations.
24.	BMP F08 pp.163	When burning machine-constructed piles, preferably locate and consume organic materials on landings or roads. If piles are within harvested units and more than 15 percent of the burned area mineral soil (portion beneath the pile) surface changes to a reddish color, then consider that amount of area towards the 20 percent detrimental soil disturbance limit.	All forest management operations.
25.	Minimize soil disturbance	Areas rated as category soils 1 and 1-2 which are considered most sensitive to burning would be excluded to the extent possible from potential broadcast burning.	Broadcast burning
26.	TPCC Changes; 2016 NWC Oregon ROD/RMP (pp. 57-58)	For additional areas found to be nonsuitable woodland according to the TPCC (Timber Production Capability Classification) criteria, these areas would be either: 1. Excluded from potential timber harvest areas; or 2. Designated as "no harvest areas" if kept within harvest units; or 3. Identified as requiring uncut, residual trees, such as for slope stability, for unstable and/or high risk for slope movement areas; or other measures as needed.	Harvest units with areas of nonsuitable woodland
Roads			
1.	BMP R 22	Install underdrain structures when roads cross or expose springs, seeps, or wet areas rather than allowing intercepted water to flow in ditchlines.	Haul Routes
2.	BMP R 23	Effectively drain the road surface by using crowning, insloping, outsloping, grade reversals (rolling dips), waterbars, or a combination of these methods. Avoid concentrated discharge onto fill slopes unless the fill slopes are stable and non-erodible	Haul Routes
3.	BMP R 31	Disconnect road runoff to the stream channel by outsloping the road approach. If outsloping is not possible, use runoff control, erosion control and sediment containment measures. These may include using additional cross drain culverts, ditch lining, and catchment basins. Minimize ditch flow conveyance to streams by placing cross drains above stream crossings.	Haul Routes
4.	BMP R 32	Locate cross drains to prevent or minimize runoff and sediment delivery to wetlands, riparian management areas, floodplains, and waters of the state. Implement sediment reduction techniques, such as settling basins, brush filters, sediment fences, or check dams to prevent or minimize sediment delivery.	Haul Routes

5.	BMP R 33	Space cross drain culverts at intervals sufficient to prevent water volume concentration and accelerated ditch erosion.	Haul Routes
6.	BMP R 35	Locate surface water drainage measures (e.g. cross drain culverts, rolling dips, or water bars) where water flow would be released on convex slopes or other stable and non-erodible areas that would absorb road drainage and prevent sediment flows from reaching wetlands, floodplains, and waters of the state. Where possible, locate surface water drainage structures above road segments with steeper downhill grades.	Haul Routes
7.	BMP R 37	Discharge cross drain culverts at ground level on non-erodible material. Install downspout structures or energy dissipaters at cross drain outlets or drivable dips where water is discharged onto loose material, erodible soils, fills, or steep slopes.	Haul Routes
8.	BMP R 62	Manage road construction so that any construction can be completed, and bare soil protected and stabilized prior to fall rains. Apply native seed and certified weed free mulch to cut and fill slopes, ditchlines, and waste disposal sites with the potential for sediment delivery to wetlands, riparian management areas, floodplains, and waters of the state. Apply upon completion of construction or as early as possible to increase germination and growth. Reseed if necessary to accomplish erosion control. Select seed species that are fast growing, have adequate germination, and provide ample ground cover and soil-binding properties. Apply mulch that would stay in place and at site specific rates to prevent erosion.	Haul Routes
9.	BMP R 71	Prior to the wet season, provide effective road surface drainage by machine cleaning ditches, blading surfaces including berm removal, constructing sediment barriers, and cleaning inlets and outlets.	Haul Routes
10.	BMP R 72	Avoid undercutting cut-slopes when cleaning ditchlines. Retain ground cover in ditchlines, except where sediment deposition or other obstructions require maintenance.	Haul Routes
11.	BMP R 75	Inspect and maintain culvert inlets and outlets, drainage structures, and ditches before and during the wet season to diminish the possibility of plugged culverts and washouts.	Haul Routes
12.	BMP R 94	On roads being hauled on during the wet season, use durable rock surfacing with sufficient surface depth to resist rutting or the development of sediment on roads that drain directly to wetlands, floodplains, or waters of the state.	Haul Routes
13.	BMP R 96	Suspend commercial use when the road surface is rutted, covered by a layer of mud, or runoff from the road surface is causing a visible increase in stream turbidity.	Haul Routes

14.	BMP R 98	Do not allow wet season haul on natural surface roads or sediment producing surfaced roads without practicable and effective mitigation.	Haul Routes
Wildlife			
1.	Maintain or promote northern spotted owl nesting roosting and foraging habitat	Avoid where practical suitable northern spotted owl nest trees (trees with broken tops, visible cavities, or platforms, visible nest structures, and debris structures, typically greater than or equal to 24 inches in width) trees adjacent to nest trees, or potential nest trees that provide habitat function regardless of conditions except when they pose public and/or operational safety hazards (may reach the road or pose hazards to operations).	Yarding wedges within LSR
2.	Prevent disturbance to NSO (northern spotted owl) during nesting season	Seasonal restrictions would be applied in nesting, roosting habitat as described in the Biological Assessment and Biological Opinion. The BLM may waive the restriction and spot check requirement in the third and fourth years if two years of protocol surveys covering all northern spotted owl habitat within the survey area indicate no resident single owls, territorial owl pairs, or pairs/two owls of unknown status and no activity centers are known to occur in the survey area and no barred owls are detected in the survey area (USDI/FWS 2012). This restriction may also be waived for public or operational safety concerns.	All activities within disturbance distance of NSO NRF habitat in all LUAs
3.	Prevent direct or indirect incidental take of NSO via habitat removal or disruption to NSO during the critical breeding period	a. Apply the Situational Management Strategy (this EA Appendix B, Table 2, p. 168) to avoid incidental take of a northern spotted owl. b. Activities within 65 yards of occupied northern spotted owl nest tree, fledging locations, edge of most recent nest patch or unsurveyed nesting, roosting, and foraging (NRF) would be prohibited from **March 1 to July 15**, both dates inclusive. c. This restriction could be waived by the BLM until March 1 of the following year, following implementation of the northern spotted owl survey protocol (USDI/FWS 2012a). If two years of protocol surveys covering all northern spotted owl habitat within the survey area indicate no resident single owls, territorial owl pairs, or pairs/two owls of unknown status and no activity centers are known to occur in the survey area and no barred owls are detected in the survey area then spot checks in the third and fourth years are not required (USDI/FWS 2012). d. To avoid harm to fledgling northern spotted owls, timing restrictions would be implemented from July 15th – August 15th within un-surveyed NRF habitat or occupied nest patches - unless surveys indicate either non-occupancy or non-nesting of northern spotted owls.	All activities within disruption distance of NSO NRF habitat in all LUAs

4.	Maintain NSO NRF habitat	Directionally fall trees to avoid removal or damage to trees identified for retention.	All activities within NSO NRF habitat in all LUAs
5.	Protect NSO NRF habitat	Where possible, use equipment as anchors along roads instead of trees within suitable northern spotted owl nesting habitat components.	Tailholds or guylines In LSR and/or RR
6.	Protect wildlife habitat trees/nest trees from damage	Where possible, avoid the use of trees that are tagged or marked as wildlife habitat trees and/or nest trees as tailhold or guyline trees.	Tailhold or guyline trees in LSR and/or RR
7.	Protect wildlife habitat trees/nest trees from damage	Where possible, avoid using conifer trees over 30 inches dbh with broken tops, obvious cavities, nest platforms and/or large limbs (6 inches or greater) as tailhold or guyline trees.	Tailhold or guyline trees in LSR and/or RR
8.	Protect wildlife habitat	Protect tailhold trees from girdling by the use of cribbing, straps, tree plates, etc. (to the greatest extent practicable, do not notch more than 50 percent of the circumference of the bole so that the tree may be able to heal over and survive).	Tailhold or guyline trees in LSR and/or RR
9.	Protect Bureau Sensitive Species	In the event a Bureau Sensitive Species is discovered within the project area (, coordinate with wildlife biologist and inform decision maker to evaluate whether there is a need to adjust treatments to meet RMP objectives.	Activities in all LUAs.
10.	Protect Bald and Golden Eagle nests and winter roosting areas.	Do not conduct timber harvest operations (including road construction, tree felling, and yarding) during the breeding season (January 1st through August 31st, both days inclusive) within 660 feet of known bald eagle or golden eagle nests. Decrease the distance to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, or after eggs laid in another nest within the territory have hatched.	Bald eagle: EA Harvest Units 24-06-04A, 24-06-04B, 24-06-04C; 24-06-5B and 24-06-07A, 24-06-07B, 24-06-07C
11.	Protect Bald and Golden Eagle nests and winter roosting areas.	Do not remove overstory trees within 330 feet of bald eagle or golden eagle nests, except for removal of hazard trees.	EA Harvest Units 24-06-04A, 24-06-04B, 24-06-04C; 24-06-5B and 24-06-07A, 24-06-07B, 24-06-07C
12.	Protect Meadow Habitat	Block spur road 23-06-29I post-harvest to avoid disturbance of area with off-road vehicles.	EA Harvest Unit 29-6-29E
13.	Protect Meadow Habitat to maintain ecological function	Avoid ground-based yarding through meadows. Place retention trees along outer edge of meadows when feasible, to limit yarding through meadows. Directionally fall trees away from meadows Snag creation would be emphasized along the down slope side of meadows.	Meadows in T 23 S., R 6 W., NE ¼ Section 27 and N ½ Section 29. Additional areas may be identified during implementation.
14.	Protect naturally occurring special habitats	When operationally feasible avoid yarding over rocky outcrops, and cliffs and use retention to create buffers around outcrops and cliffs.	T 23 S., R 6 W., NE ¼ Section 27 and N ½ Section 29. Additional areas may be identified during implementation.

15.	Reduce impacts to marbled murrelet	Before modifying forest stands in any 5-acre portion of the analysis area that contain at least 6 trees with nesting structure and pre-project clearance surveys have not yet been completed Option 2[1] will be implemented. This includes the use of seasonal restrictions (NCO ROD/RMP, p. 99).	Any activities in unsurveyed LSR and RR
16.	Reduce impacts to marbled murrelet	Before modifying forest stands in any 5-acre portion of the analysis area that contain at least 6 trees with nesting structure conduct surveys to determine occupancy. If marbled murrelet occupancy is determined do not conduct activities within the **occupied stand** and all forest within 300 feet of the occupied stand (Option 1; NCO ROD/RMP, p. 98).	Nesting habitat in the LSR, RR and occupied sites
17.	Reduce impacts to Franklin's and Western Bumble Bee	Pre-treatment assessment of the nesting, foraging, and hibernating habitat conditions the analysis areas and within areas adjacent to the analysis areas. If meadows, oak woodlands, and brush fields that provide a diverse supply of flowers that bloom throughout the colony's life cycle, from spring to autumn are located, then using the best available bumble bee protocol and best available science at the time: • Conduct project clearance surveys of potential, high quality Franklin's bumble bee habitat impacted by the habitat disturbing activities, in order to determine presence of Substantial Floral Resources. • In the absence of clearance surveys, habitats are considered occupied	All activities in all LUAs
18.	Reduce impacts to Franklin's and Western Bumble Bee	In occupied habitat: • No habitat disturbing activities (including prescribed fire and tree planting) in nesting, foraging habitat, or hibernating habitat. • Seasonally restrict operations in unit (15 May - 30 September) • Contact USFWS to determine more detailed project design features.	All habitat disturbing activities within occupied bumble bee habitat.
Botany			

[1] Exclude nesting structure from the project area39 by doing all of the following:

- Do not remove or damage nesting structure. This includes trees with nesting structure and adjacent trees with branches that interlock the branches of any tree with nesting structure.
- Do not conduct timber harvest and associated ground disturbing activities during the murrelet nesting period (April 1 – September 15) unless the U.S. Fish and Wildlife Service concurs that disturbances would not adversely affect nesting marbled murrelets.
- Maintain a 150-foot un-thinned buffer around all trees with nesting structure. Within this buffer, do not remove trees for any reason associated with timber harvest, including the placement of roads, landings, or yarding corridors. Other activities are permitted if the U.S. Fish and Wildlife Service concurs that such activities would not adversely affect nesting marbled murrelet.
- Maintain an average canopy cover of at least 60 percent post-project (averaged over each 40-acre area) in the zone between 150 feet and 300 feet of all trees with nesting structure.
- Include additional, site-specific prescriptive measures to maintain or enhance habitat conditions, as needed, in the zone between 150 feet and 300 feet from all trees with nesting structure. In this context, **maintain marbled murrelet habitat** means to maintain stand structural characteristics such that, following habitat modification, the stand could support marbled murrelet nesting.
- Maintain an average canopy cover of at least 40 percent post-project (averaged over each 40-acre area) within the project area beyond 300 feet from all trees with nesting structure.

1.	Protect Special Status Plant Species (NCO ROD/RMP, p. 87)	Treatment units and new road construction lacking current botanical surveys will be surveyed for special status botanical species. Populations of any Federally Listed Threatened or Endangered, or Bureau Sensitive botanical species found during surveys would be managed consistent with any conservation agreements or strategies including the protection and restoration of habitat, alteration of the type, timing, and intensity of actions, and other strategies designed to conserve populations of the species.	All activities in additional units of Sections T. 23 S., R. 6 W. Sections 24, 27,28, 29, & 33.
2.	Protect Special Status Plant Species (NCO ROD/RMP, p. 87)	Locate green tree retention and limit yarding activities within 100 feet of the *Rhizopogon ellipsosporus* location (10T 4644390 4820490, NAD83). Avoid all activities in the LSR adjacent to the special status site.	Unit 23-6-29C
3.	Protect Special Habitats (NCO ROD/RMP, pp. 86, 95)	Where yarding in meadows results in bare soils, reseed or plant with native vegetation appropriate to the site. Consult with botanist on appropriate species mix.	Meadows in 23-6-27 NE1/4 and 23-6-29 N1/2.
4.	Protect Special Habitats (NCO ROD/RMP, pp. 86, 95)	During reforestation following VRH, avoid planting tree species in designated meadow habitats.	Reforestation, Tree Planting

Appendix 3. Monitoring

Consultation Effects Data Input Form for
Northern Spotted Owls & Marbled Murrelets
(for use in preparing BA, BO, and annual tracking reports)

Section I: Consultation Identifier Information (fill out for each form) Page ____ of ____ forms

Consultation Type:	Consultation #	Consultation Name			Sale Volume (MBF)
☐ Formal ☐ Informal ☐ Tech Assistance ☐ Tech Asst Nat Event	Reinitiation Cross-Ref.#	Consultation Author (full name)			Fiscal Year Signed
	Suppl. ☐ or Replace ☐	Termination Date	/ /	Signature Date	/ /
Comments					

Section II: Ownership and Location Identifier Information[1]

Species	NWFP Province	Group	Land Use Allocation	CHU Identifier
		☐ NWFP Lands	☐ AMA ☐ AW	
Consulting Agency	California Ecozone	☐ Tribal	☐ CRA ☐ LSR	FY of Record
		☐ Other Fed Agency/Land	☐ MLSA ☐ MX	
Administrative Unit	MAMU Conservation Zone	☐ HCP	☐ NAT ☐ PVT	Decade
		☐ Other Private/State	☐ SEA[2]	
Administrative Subunit	NWFP Timber Sale Activity		[2]Murrelets only	Consult Status
	☐ YES ☐ NO			☐ Authorize
Project Report Name	**Report Contact Name**	**Report Contact Phone**	LUA Identifier	☐ Proj. Report

[1]Requires a new data entry form for each change in any field (fill out all fields for each form).

Section III: NSO Consultation Habitat Effects (requires separate form for each change in any data entry field in Section II)

Affected Suitable Habitat				Habitat Associated Take			Dispersal Habitat (non NRF)	
Effect	NRF	NR[3]	F[3]	Acres	AC (w/acres)	AC (wo/acres)	Acres	Assoc. Harm
Removed								
Downgraded								
Degraded								
Added								

[3]California only.

		Annual Effects (Number by Fiscal Year)					
	Disturbance Effects	FY'	FY'	FY'	FY'	FY'	FY'
☐ Harm ☐ Harass	Acres (wo/ LOPs)						
	Activity Centers (w/acres)						
	Activity Centers (wo/acres)						

Section III: MAMU Consultation Habitat Effects (requires separate form for each change in any data entry field in Section II)

Affected Habitat				Habitat Associated Harm		
	Suitable Habitat		Critical Habitat			
Effect	Stands	Remnants	½ Site Potential w/in .5 mile	Unsurveyed Acres	Occupied Acres	Surveyed Not Occupied Acres
Removed						
Degraded						
Added						
# trees						

		Annual Effects (Number by Fiscal Year)					
	Non-Habitat Effects	FY'	FY'	FY'	FY'	FY'	FY'
☐ Harm ☐ Harass	Unsurveyed Suitable Habitat (Acres)						
	Occupied Suitable Habitat (Acres)						
	# Individuals						

Section II & III: General Note and Comments

R1 ES/OTS-3 Rev. 03/22/2004

APPENDIX 4 – Definitions and Terms for the Northern Spotted Owl and Marbled Murrelet Analysis

Northern Spotted Owl Habitat Type and Function

NRF Habitat

Habitat for the spotted owl used for nesting, roosting, and foraging is also referenced as "NRF" habitat. NRF habitat also provides for dispersal function (described below). There are multiple vegetative components that, when acting together in concert, constitute NRF habitat including: conifer cover, conifer diameter, density of large (≥ 30 inches diameter at breast height (DBH)) conifers, canopy cover greater than 60 percent, stand height, and stand age. Dead vegetative components such as snags and down wood material also contribute to NRF habitat because they provide nesting/roosting structures for spotted owls as well as for small mammal prey (e.g., flying squirrels). The amount of these live or dead vegetative components present in NRF habitat varies by physiographic province.

For this analysis, NRF habitat is generally mature or older coniferous forest that contains large-diameter trees and snags with nesting structure, is multi-storied, and has sufficient vertical and horizontal cover to provide opportunities for nesting, roosting and foraging activities. NRF habitat classification for this analysis was done by either (a) field verification by wildlife biologists or (b) using FOI data where forest 80 years of age or older (i.e., a stand birthdate prior to 1942) in the absence of field verification of habitat function.

Recovery Action 32 (RA 32) quality habitat is a subset of NRF habitat which is characterized as *"well distributed, older and more structurally complex multi-layered conifer forests" having large diameter trees, high amounts of canopy cover, and decadence components such as broken-topped live trees, mistletoe, cavities, large snags, and fallen trees (USDI FWS 2011a p. III-67)".* Refer to Appendix D for more discussion about Recovery Action 32.

Dispersal-Only Habitat

Dispersal habitat is essential for the movement of juvenile and non-territorial (e.g., single birds) northern spotted owl to fill territorial vacancies and provide adequate gene flow across the range of the species (USDI FWS 2008). For this analysis, dispersal-only habitat is generally young to mature coniferous forest with a high amount of canopy cover. Classically, dispersal-only habitat for the spotted owl was regarded as conifer-dominated forest stands with canopy cover of 40 percent or greater and an average DBH of 11 inches or greater (Thomas et al. 1990). However, the "marginal" class of habitat, is likely important for supporting dispersal, foraging, and nonbreeding (i.e., floater) individuals (Lesmeister et al. 2018a, p. 252). Dispersal habitat may contain snags, coarse down wood, and prey sources, which are habitat components allowing northern spotted owls to move and forage between blocks of NRF habitat (USDI FWS 2008).

For this analysis, dispersal-only habitat is generally defined as conifer-dominated forest stands approximately 40 to 79 years old. However, dispersal-only habitat classification for this analysis within unit boundaries was done by field verification by wildlife biologists. In the absence of field verification of habitat function, classification of habitat outside of unit boundaries were determined using FOI data where conifer stands with birthdates of 1943 to 1982 (40-79 years old) were considered dispersal-only habitat.

Dispersal Habitat

Davis and others (2016, p.12) described "dispersal-capable landscapes" as those which contain >40 percent dispersal-quality habitat, while Thomas et al. (1990) suggested at least 50 percent dispersal habitat across the landscape would provide for dispersal/connectivity functions for spotted owls. For this analysis dispersal habitat is defined as a combination of NRF and dispersal-only habitats across the landscape.

Forest-Capable

For this analysis, forest-capable is defined as conifer-dominated forest stands less than 40 years old and are not currently functioning as NRF or dispersal-only habitats. Because forest-capable does not currently contain habitat elements necessary for maintaining northern spotted owl life history functions, it will not be discussed at each of the analytical spatial scales (i.e., home range and core-use area).

Non-Capable

Roads and non-forest lands (open water, agricultural or urban areas, rock outcrops, grasslands, etc.) are considered non-capable. For this analysis, the District assumed that the total width of non-capable lands along existing roads is 16 feet (8 feet from centerline) and that the total width of non-capable lands along highways is 45 feet (22.5 feet from centerline).

Terms Describing Changes in Habitat Type and Function

When assessing if a treatment is a modification, downgrade, or removal, the "central mean tendency" of the suite of vegetative components comprising habitat by spotted owls was considered in this analysis.

Modify means the habitat will not change its designated habitat function as a result of treatment, thereby maintaining its current biological functions for spotted owls.

- NRF habitat – a minimum of 60 percent canopy cover is maintained post- harvest.
- Dispersal-only habitat – a minimum of 40 percent canopy cover is maintained post-harvest.

Downgrade of NRF habitat means to alter the function of spotted owl NRF habitat so that it no longer supports nesting, roosting, and foraging functions, but will support spotted owl dispersal (Thomas et al.1990, Davis et al. 2011, pg. 50). Downgrade may also be used to describe effects to dispersal-only habitat. Downgrade of dispersal-only habitat means to alter the function so that it no longer supports dispersal functions through that patch/stand. In both NRF and dispersal-only habitat downgrade, functionality is reduced but there is still a substantial residual vegetative component.

Remove means to alter spotted owl NRF or dispersal-only habitat so that the habitat no longer provides any function for the species. Recovery of the lost biological function(s) are not expected in the short-term and it is expected it will take several decades for the habitat to re-develop following removal (e.g., > 20 years). NRF and/or dispersal-only habitat are converted to forest-capable, which would no longer support nesting, roosting, foraging or dispersal for northern spotted
owls.

Analytical Spatial Scales

Home Range

The provincial home range (home range) size varies by physiographic province and is the "area traversed by the individual in its normal activities of food gathering, mating, and caring for young" (Burt 1943, p. 351). The northern spotted owl home range in the Oregon Coast Range is a 1.5-mile radius circle centered on a site, encompassing 4524 acres, and is used by northern spotted owls for nesting, roosting, and foraging activities (Thomas et al. 1990 and Courtney et al. 2004). The home ranges of several northern spotted owl pairs may overlap with the habitat shared by adjacent owl pairs and other non-territorial owls. The home range is important for the survival and productivity of northern spotted owls because they are non- migratory birds that remain within their home range year-round (Thomas et al. 1990).

Available science suggests that as the amount of NRF habitat in a northern spotted owl's home range decreases, so does site occupancy, reproduction, and survival (Bart and Forsman 1992, Bart 1995, Forsman et al. 2005). Thomas et al. (1990), Bart and Forsman (1992), Bart (1995), Olson et al. 2004, and Dugger et al. (2005) suggest that when northern spotted owl home ranges are comprised of less than 40 to 60 percent NRF habitat, they were more likely to have lower occupancy and fitness as cited in the BO for the NCO RMP/ROD (USDI FWS 2016, p. 58). In addition, results of Dugger et al. (2005) and Olson et al. (2004) suggest that younger stands do not necessarily contribute to overall habitat-fitness.

The amount of NRF habitat considered necessary to maintain northern spotted owl life functions within a 1.5-mile home range radius is 1809 acres (40 percent of the total home range acres) (Thomas et al. 1990 and Courtney et al. 2004). In this analysis, "habitat-limited" means that the provincial home range has less than 40 percent (1809 acres) NRF habitat available.

Core-Use Area

The core-use area is a 0.5-mile radius circle centered on a northern spotted owl site, encompassing an area of approximately 500 acres. The core-use area is used to describe the area most heavily utilized during the nesting season (USDI FWS 2008b). Core-use areas are defended by territorial northern spotted owls and generally do not overlap with other northern spotted owl pairs.

A substantial amount of work has been done to determine how much habitat is necessary for a spotted owl site to be successful. Meyer et al. (1998) examined landscape indices associated within spotted owl sites versus random plots on BLM lands throughout Oregon, and found that across provinces, percent of old forest (approximately 30 percent) were highly positively correlated with the probability of spotted owl occupancy within the 500 acres surrounding the site. Meyer et al. (1998) also determined that territory occupancy decreased following harvest of NRF habitat in the affected core area. Zabel et al. (2003) found in their northwest California study, that the highest probability of owl occupancy occurred when the core- use area was composed of 69 percent nesting/roosting habitat. Bart (1995) found that core-use areas should contain 30-50 percent mature and old growth forest. Most recently, Dugger et al. (2005) showed in their southern Oregon study area that when owl core-use areas had at least 50-60 percent older forest habitat, spotted owl fitness (i.e., survival and reproduction) was relatively higher than in core-use areas with lesser amounts.

Within the core-use area, habitat within 200-300 meters of the nest is important to nest site selection and habitat use by post-fledgling owls (Miller 1989; Swindle et al. 1999; Perkins et al. 2000). The amount of NRF habitat considered essential to maintain northern spotted owl life functions is 250 acres (50 percent) of the core-use area (Irwin et al. 2005, Glenn et al. 2004, and Carey et al. 1992). Other studies determined the probability of spotted owl occupancy and habitat fitness varies according to the amount of NRF within the core-use area (Bart 1995, Meyer et al. 1998, Zabel et al. 2003, and Dugger et al. 2005). These critical values vary from 30 percent (Meyer et al. 1998) to 69 percent

(Zabel et al. 2003). Thus, impacts were compared against the mean value of 50 percent (of 500 acres) NRF within the core-use area, which is approximately half-way between the critical values of 30 and 69 percent (Bart 1995, Meyer et al. 1998, Zabel et al. 2003, and Dugger et al. 2005). It also corresponds to 250 acres of NRF considered essential to maintain northern spotted owl life functions (Irwin et al. 2005, Glenn et al. 2004, and Carey et al. 1992). Therefore, for this analysis, "habitat-limited" means the spotted owl core-use area has less than 50 percent (< 250 acres) NRF habitat available.

Nest Patch

The 70-acre nest patch is centered within the core-use area, represented by a circle with a 300-meter radius centered on the nest tree (Perkins 2000; Swindle et al. 1999; Miller 1989) or activity center of a pair or resident single spotted owl. As central place foragers, nesting spotted owls are likely most sensitive to activities that occur near the nest site. Nest patches are usually associated with older forest; however, younger forests may be an important component due to their proximity to the nest site and potential usage by spotted owls (Glenn et al. 2004, p. 48). Relatively minor changes in stand composition or shape of a nest patch may result in substantial reductions in the likelihood of occupancy and reproduction of the territory. (Swindle et al. 1999, Perkins 2000).

In this analysis habitat acres treated may exceed harvest acres in the proposed action due to the difference in road-width assumptions and number rounding. For existing roads, environmental baseline road-width assumptions for the northern spotted owl analysis corresponds with the 16-foot road-width used in ESA consultation for this project. In contrast, a 45-foot road width is used for the proposed action acres and for other resources analyze which corresponds to the PRMP/FEIS assumptions for the NCO ROD/RMP (USDI - Bureau of Land Management, 2016b, p. 753).

Marbled Murrelet Habitat Type and Function

Marbled murrelet nesting structure

A conifer tree with all of the following characteristics (which are not always visible from the ground) within 50 miles of the Pacific Coast (NCO RMP, pg. 98; SWO RMP, pg. 119):

- A DBH of at least 19.1 inches and a height greater than 107 feet.
- A nest platform at least 32.5 feet above the ground (a nest platform is a relatively flat surface at least 4 inches wide, with nesting substrate (e.g., moss, epiphytes, duff), and an access route through the canopy that a murrelet could use to approach and land on that platform).
- A tree branch or foliage, either on the tree with potential structure or on an adjacent tree, which provides protective cover over the platform.

Note: Nesting structure does not have to be occupied by nesting marbled murrelets.
Forest stands providing nesting opportunities are considered **nesting habitat** for the murrelet. Generally, this habitat is 80 years of age or older (i.e., a stand birthdate prior to 1937) includes marbled murrelet nesting structure, and is within 50 miles of the coast.

Recruitment habitat

Forested stands within 50 miles of the coast containing a residual component of potential nesting structure, as described in the *Management of Potential Marbled Murrelet Nesting Structure in Thinning Stands* guidance of March 26, 2004 (USDI BLM and FWS 2004). This habitat type occurs in mid-seral stands when residual or remnant trees were left standing during previous harvest. For this analysis, recruitment habitat is generally conifer stands with birthdates of 1937 to 1976 (40-79 years old) and likely contain nesting structure as described above and/or capable of becoming nesting habitat within 50 years. Roads are not considered recruitment habitat. For terrestrial wildlife consultation analyses, the District assumed that the total width of non-capable habitat along existing GTRN roads is 16 feet (8 feet from centerline) and that the total width of non-capable habitat along existing highways is 45 feet (22.5 feet from centerline).

Forest-Capable

For this analysis, forest-capable is defined as conifer-dominated forest stands less than 40 years old and are not currently functioning as nesting or recruitment habitats.

Non-Capable

Roads and non-forest lands (open water, agricultural or urban areas, rock outcrops, grasslands, etc.) are considered non-capable. For this analysis, the District assumed that the total width of non-capable lands along existing roads is 16 feet (8 feet from centerline) and that the total width of non-capable lands along highways is 45 feet (22.5 feet from centerline).

APPENDIX 5 – Summary of northern spotted owl analytical circles

Table 1. Effects of the Blue and Gold Harvest Plan to northern spotted owl nest patches (70 acres).

MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 70 ac	acres	% of 70 ac	acres	acres	acres	% of 70 ac	acres	% of 70ac	acres	acres	acres	% of 70 ac
0266	Unknown	69	98	50	71	0	0	50	71	18	26	0	0	18	26
0267	Unknown	24	34	24	34	0	0	24	34	0	0	0	0	0	0
0269	No Detections	70	100	45	65	0	0	45	65	24	34	0	0	24	34
0271	No Detections	44	63	19	27	0	0	19	27	25	36	0	0	25	36
0272	No Detections	70	100	53	76	0	0	53	76	16	23	0	0	16	23
0391	Incidental	45	65	39	56	1	13	38	54	0	0	0	0	0	0
0392	Occupied	64	92	64	92	0	0	64	92	0	0	0	0	0	0
0514	No Detections	70	100	18	26	0	0	18	26	32	46	0	0	32	46
1160	Unknown	70	100	19	28	0	0	19	28	29	41	0	0	29	41
1359	No Detections	53	75	51	73	0	0	51	73	0	0	0	0	0	0
1802	No Detections	64	91	61	88	0	0	61	88	0	0	0	0	0	0
1803	No Detections	37	53	25	36	0	0	25	36	0	0	0	0	0	0
1804	No Detections	51	72	51	72	0	33	51	72	0	0	0	0	0	0
1816	Unknown	64	92	47	67	0	0	47	67	11	16	0	0	11	16
1916	No Detections	69	98	31	45	1	0	30	43	35	50	18	0	17	24
1923	No Detections	47	67	42	59	0	0	42	59	6	8	5	0	1	1
1924	Incidental	69	98	67	95	0	0	67	95	2	2	1	0	1	1
1925	No Detections	16	23	16	23	0	0	16	23	0	1	0	0	0	1
1972	Incidental	70	100	69	98	0	0	69	98	1	2	0	0	1	2
1977	No Detections	49	70	49	70	0	0	49	70	0	0	0	0	0	0
1980	No Detections	70	100	49	70	0	0	49	70	20	28	0	0	20	28

MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 70 ac	acres	% of 70 ac	acres	acres	acres	% of 70 ac	acres	% of 70ac	acres	acres	acres	% of 70 ac
1983	No Detections	70	100	52	75	0	0	52	75	1	1	0	0	1	1
1987	Incidental	70	100	69	99	1	34	68	94	0	0	0	0	0	0
1988	Unknown	57	81	43	62	0	0	43	62	13	19	0	0	13	19
1992	No Detections	65	93	64	92	0	32	64	92	0	0	0	0	0	0
2049	Unknown	42	60	15	22	0	0	15	22	26	37	0	0	26	37
2051	No Detections	58	83	53	76	0	0	53	76	0	0	0	0	0	0
2144	No Detections	34	49	24	34	0	0	24	34	10	15	0	0	10	15
2201	Unknown	64	91	62	89	0	0	62	89	1	2	0	0	1	2
3267	Occupied	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3904	No Detections	38	54	33	47	0	0	33	47	4	6	0	0	4	6
4055	No Detections	5	7	5	7	0	0	5	7	0	0	0	0	0	0
4506	No Detections	68	97	23	33	0	0	23	33	43	62	0	0	43	62
4516	No Detections	43	62	42	60	0	6	42	60	1	2	0	0	1	2
4574	No Detections	35	50	35	50	0	0	35	50	0	0	0	0	0	0
4659	Incidental	32	45	2	2	0	2	2	2	0	0	0	0	0	0
4661	No Detections	70	100	46	65	0	0	46	65	24	34	0	0	24	34
4673	No Detections	37	52	25	36	0	0	25	36	6	8	0	0	6	8
4682	No Detections	50	72	27	39	0	0	27	39	21	30	0	10	21	30

Table 2. Effects of the Blue and Gold Harvest Plan to northern spotted owl core-use areas (500 acres).

MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 500 ac	acres	% of 500 ac	acres	acres	acres	% of 500 ac	acres	% of 500 ac	acres	acres	acres	% of 500 ac
0266	Unknown	422	84	234	47	0	0	234	47	162	32	0	0	162	32
0267	Unknown	99	20	99	20	0	0	99	20		0	0	0	0	0
0269	No Detections	337	67	266	53	0	0	266	53	69	14	0	0	69	14
0271	No Detections	257	51	104	21	0	0	104	21	149	30	0	0	149	30
0272	No Detections	386	77	264	53	0	0	264	53	117	23	0	0	117	23
0391	Incidental	271	54	221	44	6	29	215	43	0	0	0	0	0	0
0392	Occupied	255	51	249	50	0	0	249	50	5	1	0	0	5	1
0514	No Detections	400	80	212	42	0	0	212	42	102	20	0	0	102	20
1160	Unknown	245	49	77	15	0	0	77	15	97	19	0	0	97	19
1359	No Detections	135	27	95	19	0	0	95	19	36	7	0	0	36	7
1802	No Detections	207	41	202	40	0	0	202	40	0	0	0	0	0	0
1803	No Detections	252	50	170	34	0	0	170	33	0	0	0	0	0	0
1804	No Detections	335	67	328	66	0	225	328	66	0	0	0	0	0	0
1816	Unknown	327	65	182	36	0	0	182	36	80	16	0	0	80	16
1916	No Detections	303	61	115	23	5	0	110	22	135	27	49	7	86	18
1923	No Detections	298	60	222	44	3	0	219	44	38	8	27	2	11	3
1924	Incidental	325	65	186	37	1	1	185	37	128	26	48	11	80	16
1925	No Detections	51	10	23	5	0	0	23	5	27	5	0	0	27	5
1972	Incidental	362	72	305	61	0	0	305	61	40	8	0	19	38	8
1977	No Detections	173	35	171	34	0	0	171	34	0	0	0	0	0	0
1980	No Detections	406	81	229	46	0	0	229	46	82	16	0	0	82	16
1983	No Detections	339	68	194	39	0	0	194	39	70	14	1	0	69	14
1987	Incidental	328	66	269	54	3	231	266	52	0	0	0	0	0	0
1988	Unknown	273	55	143	29	0	0	143	29	128	26	0	0	128	26
1992	No Detections	355	71	316	63	0	248	316	63	0	0	0	0	0	0
2049	Unknown	241	48	148	30	0	0	148	30	91	18	0	0	91	18

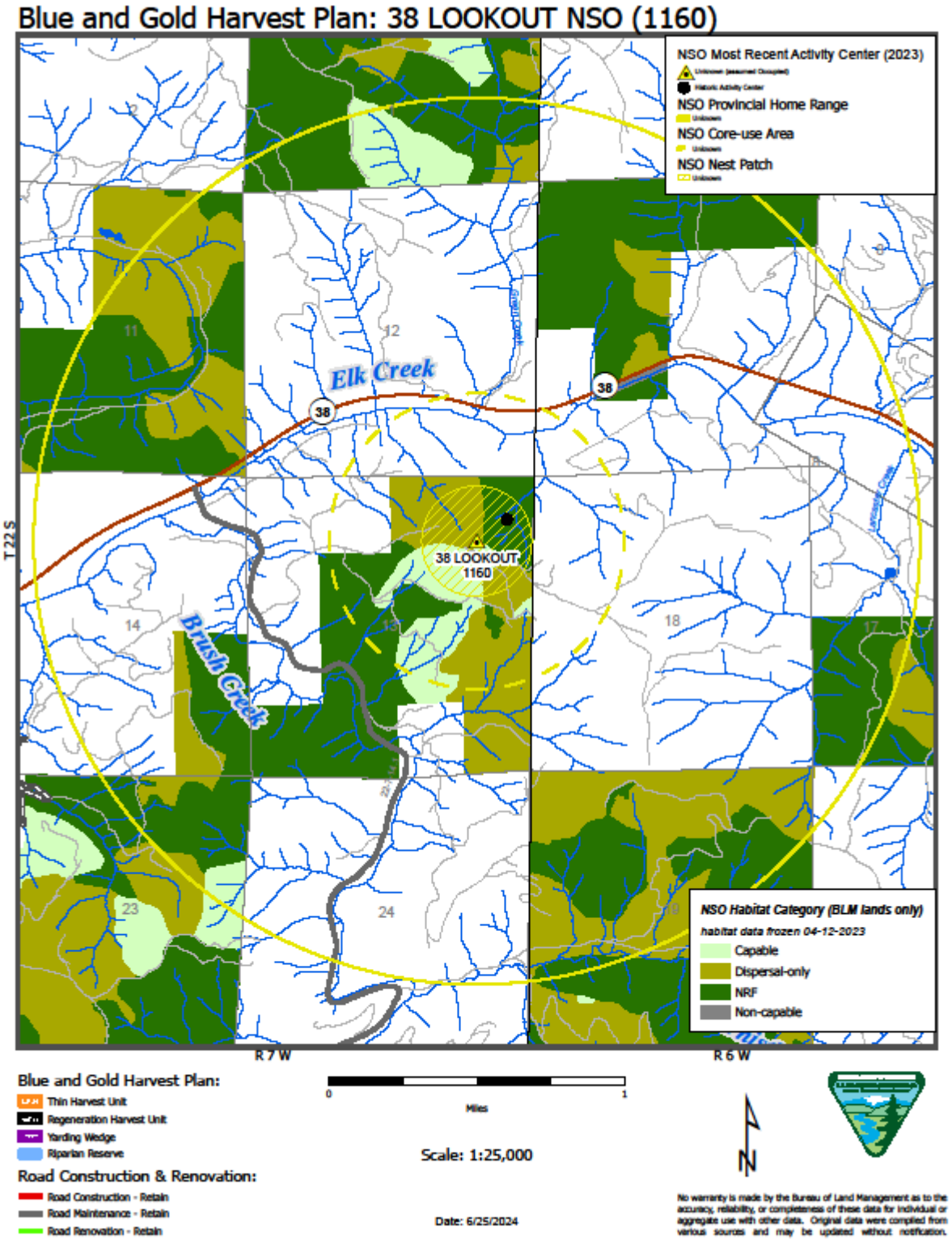
MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 500 ac	acres	% of 500 ac	acres	acres	acres	% of 500 ac	acres	% of 500 ac	acres	acres	acres	% of 500 ac
2051	No Detections	326	65	220	44	0	0	220	44	11	2	0	0	11	2
2144	No Detections	87	17	59	12	0	0	59	12	26	5	0	0	26	5
2201	Unknown	343	69	308	62	0	0	308	62	33	7	0	0	33	7
3267	Occupied	31	6	31	6	0	0	31	6	0	0	0	0	0	0
3904	No Detections	250	50	141	28	0	0	141	28	106	21	0	0	106	21
4055	No Detections	171	34	139	28	0	0	139	28	9	2	0	0	9	2
4506	No Detections	325	65	79	16	0	0	79	16	241	48	0	0	241	48
4516	No Detections	267	53	229	46	0	43	229	46	8	2	1	1	7	1
4574	No Detections	41	8	41	8	0	0	41	8	0	0	0	0	0	0
4659	Incidental	251	50	155	31	1	59	154	31	29	6	11	0	18	4
4661	No Detections	491	98	171	34	0	2	171	34	248	50	0	1	248	50
4673	No Detections	281	56	93	19	0	0	93	19	105	21	0	0	105	21
4682	No Detections	228	46	116	23	4	0	112	22	36	7	16	11	20	4

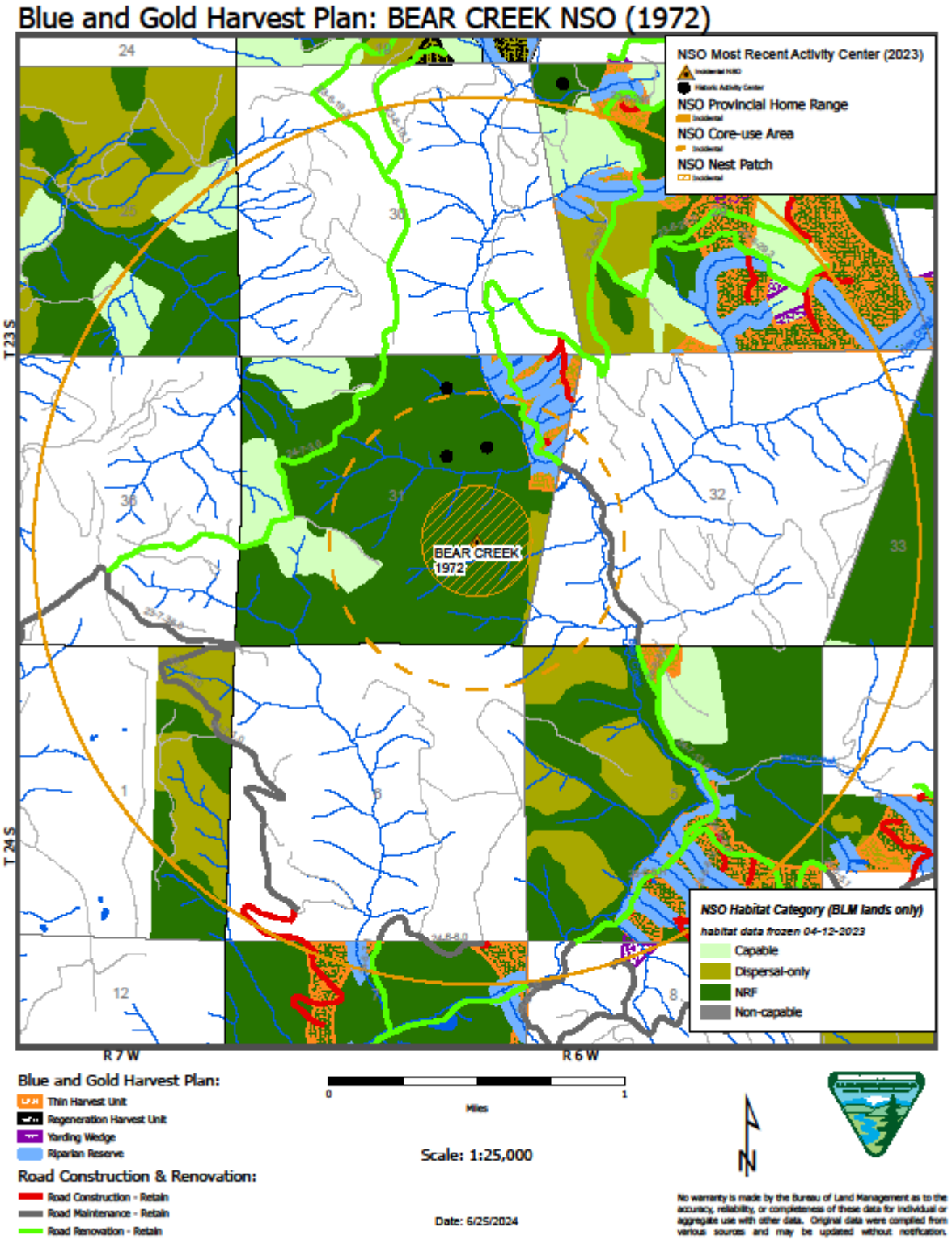
Table 3. Effects of the Blue and Gold Harvest Plan to northern spotted owl home ranges (4,524 acres).

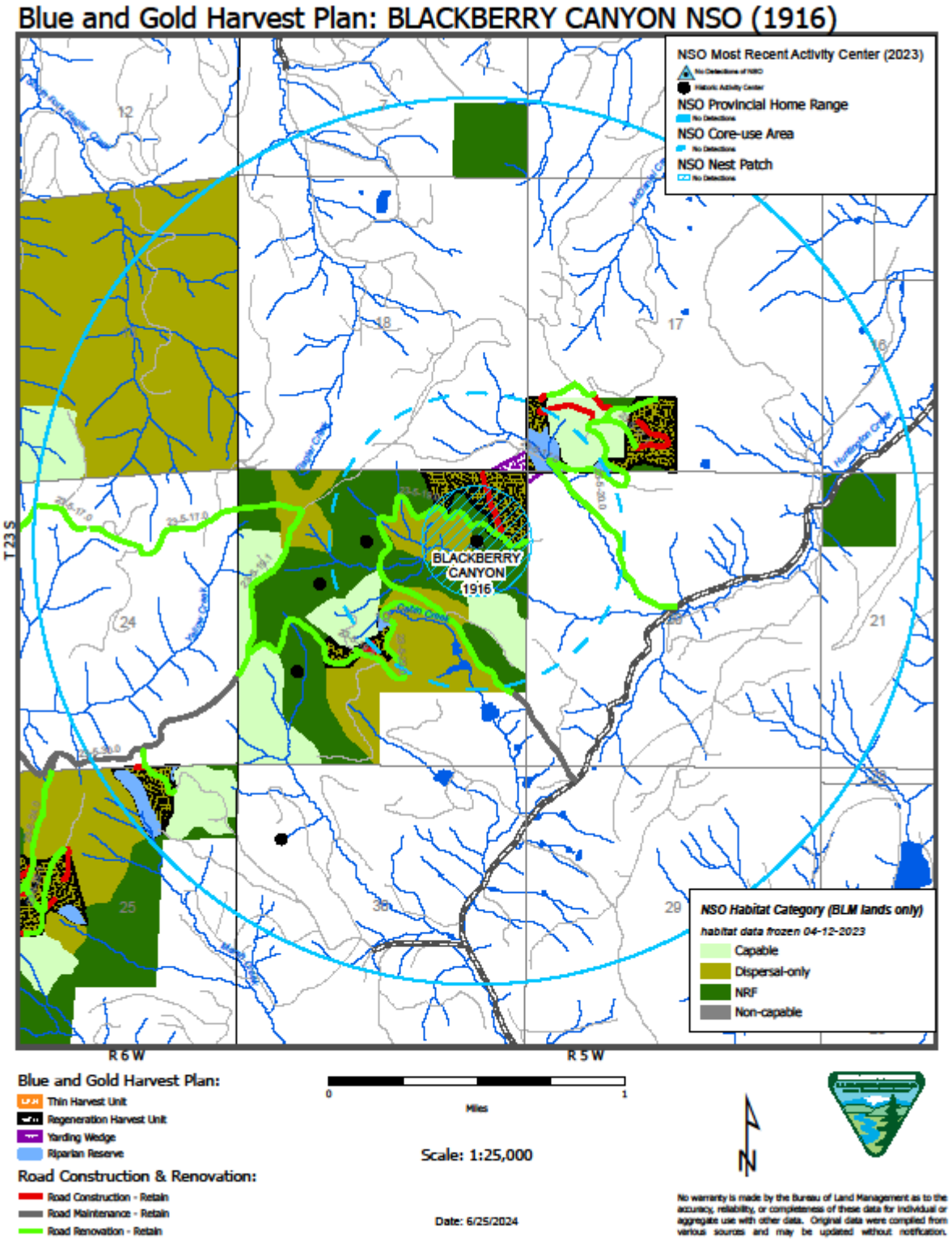
MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 4,524 ac	acres	% of 4,524 ac	acres	acres	acres	% of 4,524 ac	acres	% of 4,524 ac	acres	acres	acres	% of 4,524 ac
0266	Unknown	2747	61	1772	39	0	0	1772	39	706	16	0	1	706	16
0267	Unknown	1819	40	1424	31	0	0	1424	31	344	8	0	2	344	8
0269	No Detections	1518	34	972	21	0	3	972	21	440	10	0	2	440	10
0271	No Detections	1917	42	1159	26	0	0	1159	26	703	16	0	0	703	16
0272	No Detections	1765	39	1097	24	2	0	1095	24	610	13	1	2	609	13
0391	Incidental	2190	48	1264	28	30	217	1234	27	698	15	61	47	617	14
0392	Occupied	1324	29	926	20	0	0	926	20	360	8	0	0	360	8
0514	No Detections	2131	47	808	18	2	1	806	18	966	21	47	23	919	20
1160	Unknown	1702	38	968	21	0	2	968	21	574	13	0	0	574	13
1359	No Detections	1070	24	614	14	0	0	614	14	332	7	0	0	332	7
1802	No Detections	875	19	751	17	0	4	751	17	108	2	1	1	107	2
1803	No Detections	2095	46	1047	23	6	1	1041	23	699	15	29	78	670	15
1804	No Detections	2842	63	2237	49	25	1114	2212	49	317	7	19	116	298	6
1816	Unknown	1902	42	949	21	0	2	949	21	761	17	0	2	761	17
1916	No Detections	1064	24	311	7	11	0	300	7	536	12	95	14	441	10
1923	No Detections	2279	50	1045	23	8	2	1039	23	922	20	198	59	724	16
1924	Incidental	2427	54	1686	37	7	470	1679	37	482	11	83	16	399	9
1925	No Detections	1302	29	694	15	0	0	694	15	520	11	0	0	520	11
1972	Incidental	2038	45	1318	29	14	213	1304	29	406	9	6	89	400	9
1977	No Detections	1450	32	922	20	0	0	922	20	390	9	0	0	390	9
1980	No Detections	2107	47	819	18	10	10	809	18	916	20	6	0	910	20
1983	No Detections	1387	31	755	17	1	1	754	17	417	9	0	3	417	9
1987	Incidental	2636	58	1581	35	19	750	1562	34	627	14	38	2	589	12
1988	Unknown	2780	61	1809	40	0	2	1809	40	831	18	0	3	831	18
1992	No Detections	2811	62	2010	44	19	1215	1991	44	423	9	74	9	349	8
2049	Unknown	1388	31	756	17	0	0	756	17	451	10	0	0	451	10

MSNO	2023 Occupancy	Total Federal		NRF Baseline		NRF Loss	NRF Modified	Post-Action NRF Baseline		Dispersal-Only Baseline		Dispersal-Only Loss	Dispersal-Only Modified	Dispersal-Only Post-Action Baseline	
		acres	% of 4,524 ac	acres	% of 4,524 ac	acres	acres	acres	% of 4,524 ac	acres	% of 4,524 ac	acres	acres	acres	% of 4,524 ac
2051	No Detections	2696	60	1526	34	24	466	1502	33	623	14	156	67	467	10
2144	No Detections	1285	28	816	18	0	1	816	18	287	6	0	1	287	6
2201	Unknown	2497	55	1923	43	0	0	1923	43	423	9	0	3	423	9
3267	Occupied	1363	30	811	18	2	0	809	18	473	10	9	60	464	10
3904	No Detections	1828	40	1010	22	0	1	1010	22	605	13	1	0	604	13
4055	No Detections	1969	44	1410	31	18	168	1392	31	343	8	2	63	341	8
4506	No Detections	2058	45	953	21	7	254	946	21	747	17	5	0	742	16
4516	No Detections	1214	27	889	20	9	100	880	19	222	5	1	4	221	5
4574	No Detections	828	18	413	9	0	0	413	9	290	6	0	0	290	6
4659	Incidental	2444	54	1731	38	10	957	1721	38	369	8	104	23	265	6
4661	No Detections	1703	38	994	22	4	3	990	22	548	12	30	3	518	12
4673	No Detections	2094	46	713	16	13	0	700	15	875	19	151	66	724	16
4682	No Detections	1184	26	582	13	8	87	574	13	317	7	100	23	217	5

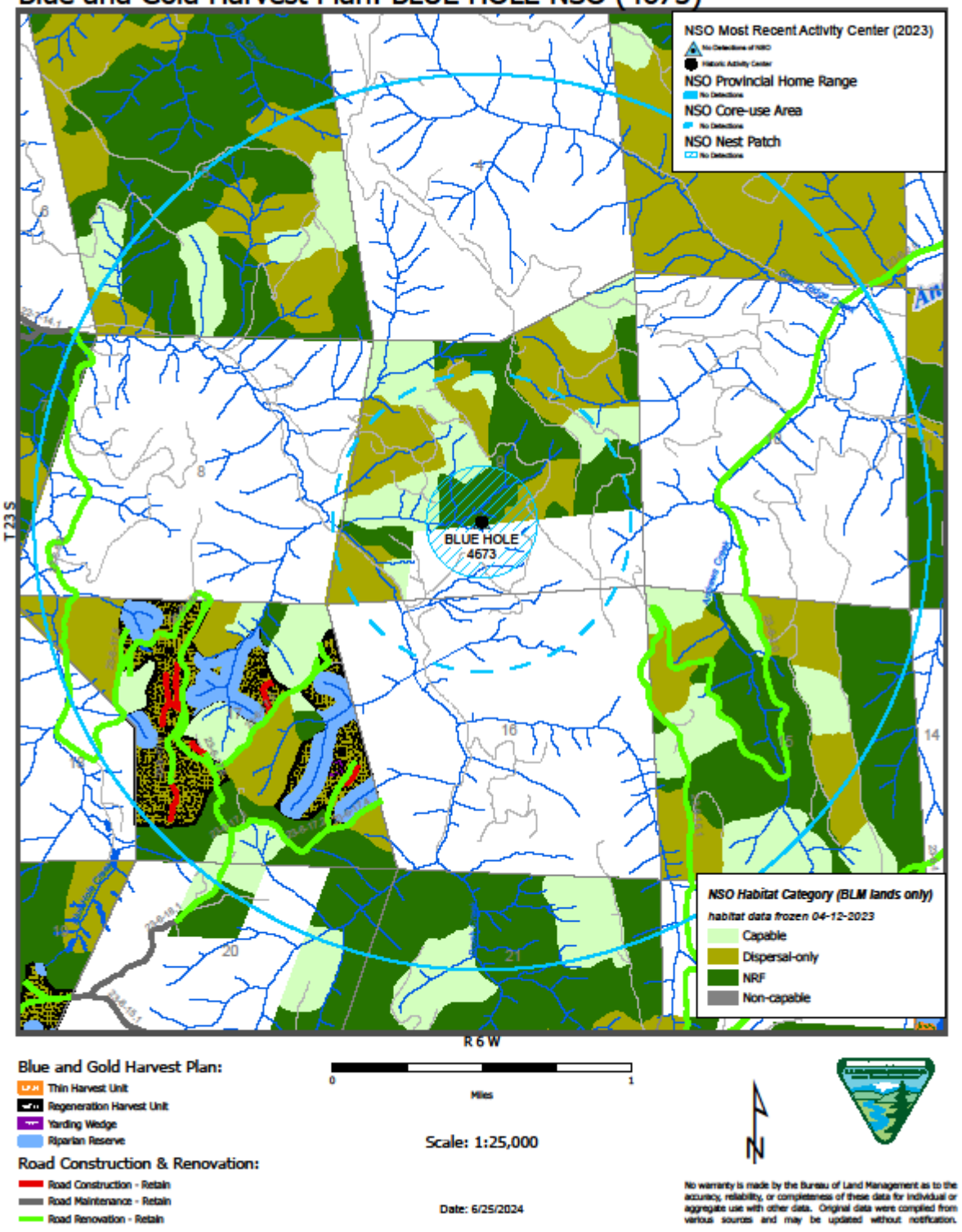
APPENDIX 6 – Northern spotted owl activity center maps

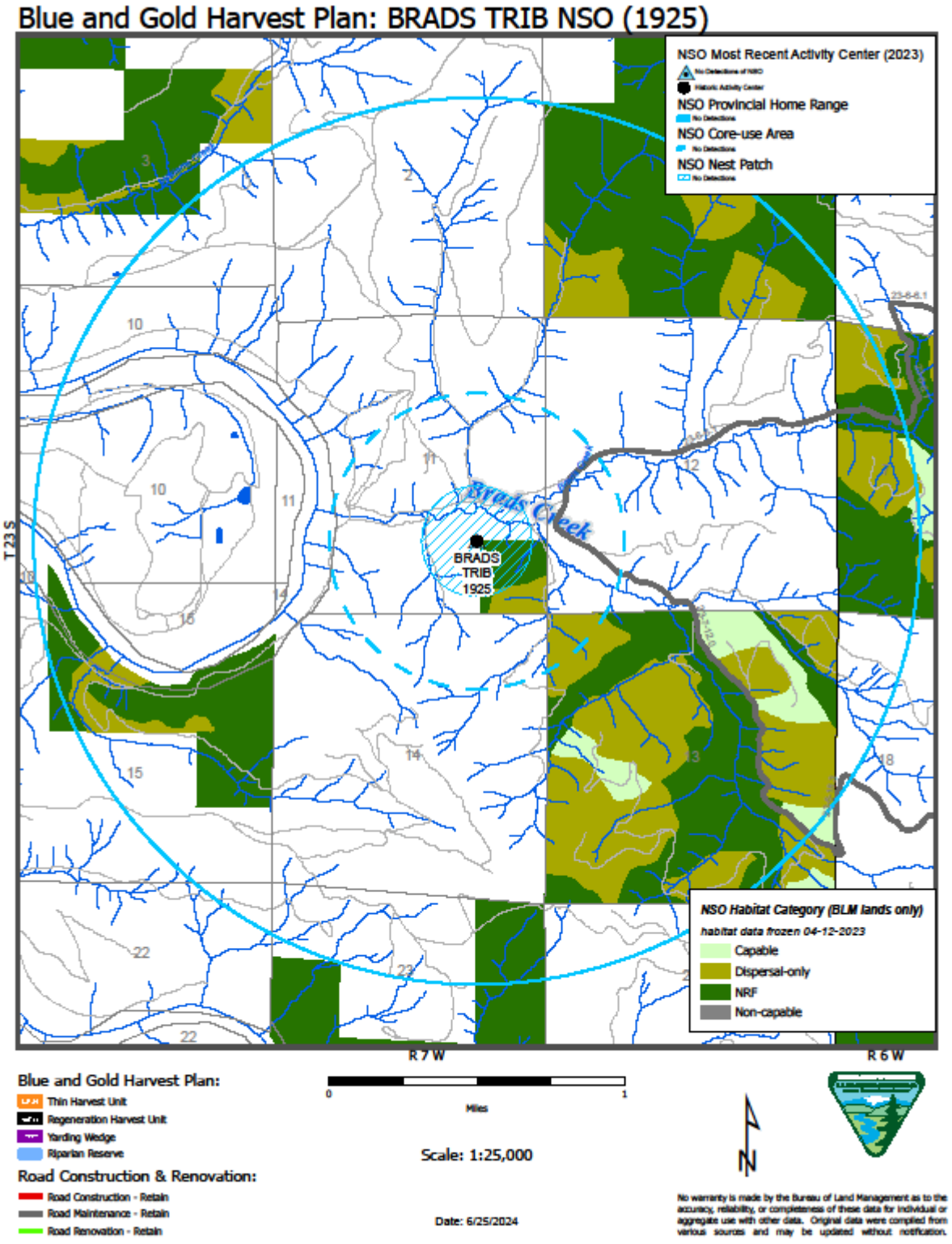

Blue and Gold Harvest Plan: 38 LOOKOUT NSO (1160)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Elk Creek
38
38 LOOKOUT 1160
Brush Creek
T 22 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

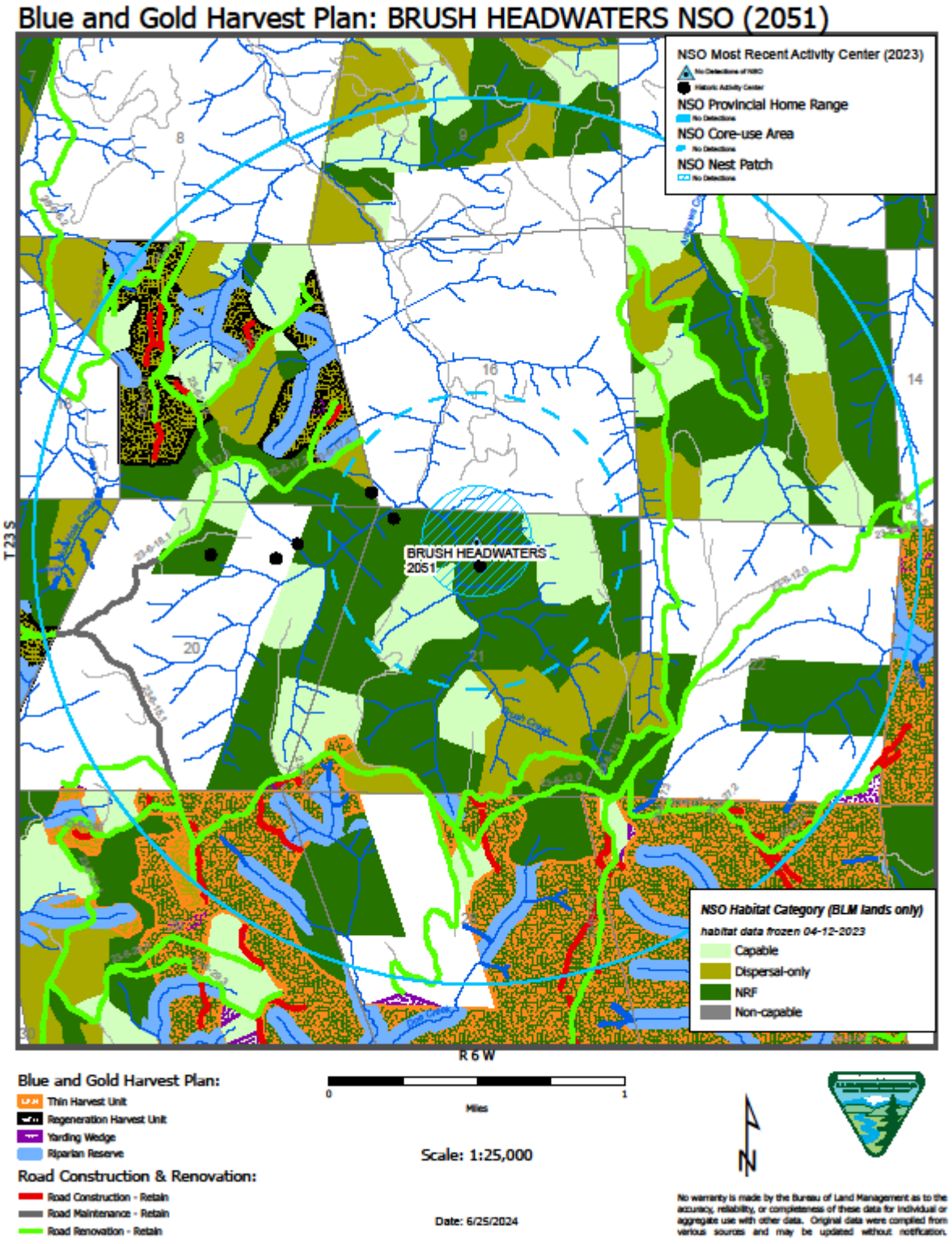

Blue and Gold Harvest Plan: BEAR CREEK NSO (1972)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
BEAR CREEK
1972
T 23 S
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

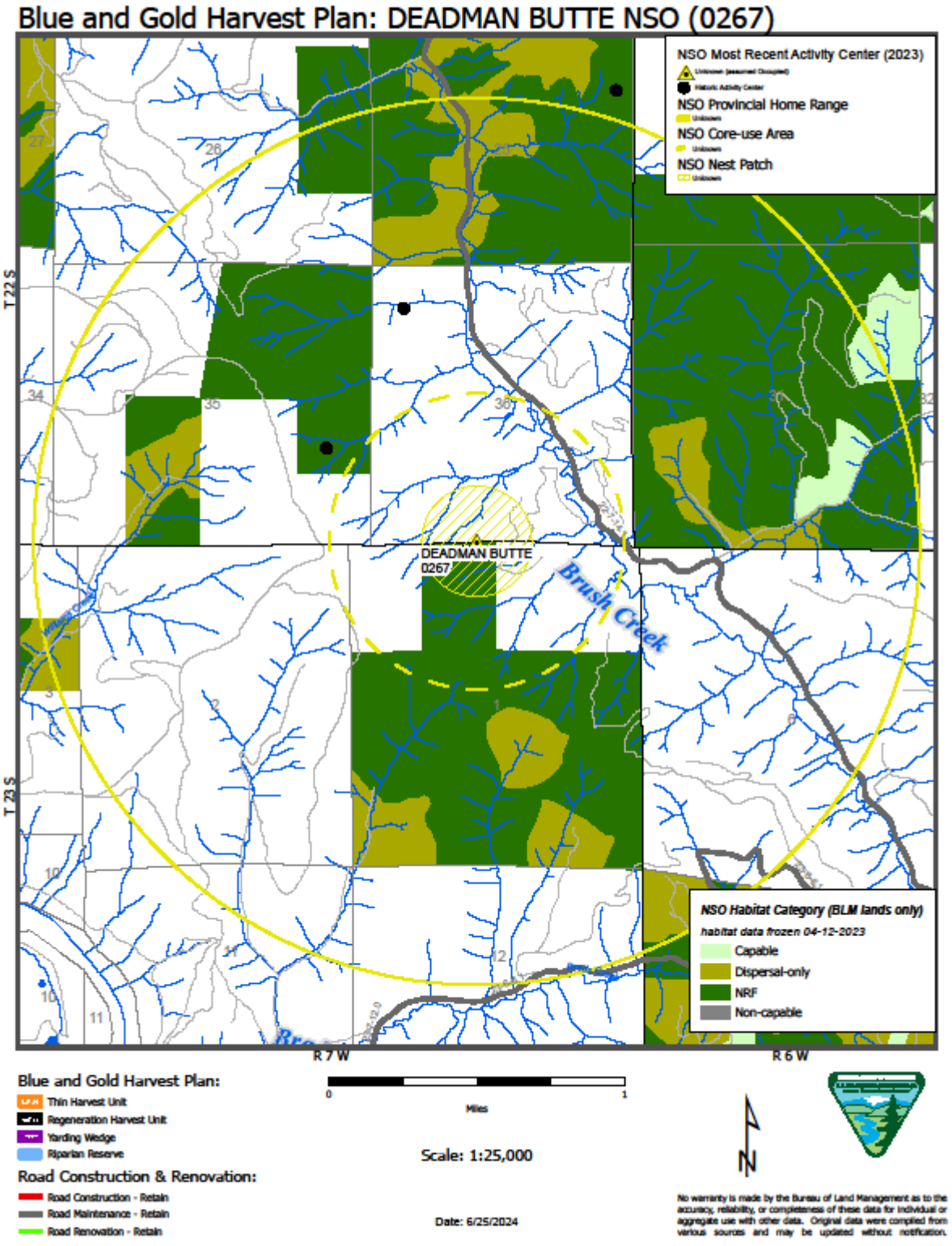

Blue and Gold Harvest Plan: BLACKBERRY CANYON NSO (1916)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
BLACKBERRY CANYON 1916
T 23 S
R 6 W
R 5 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

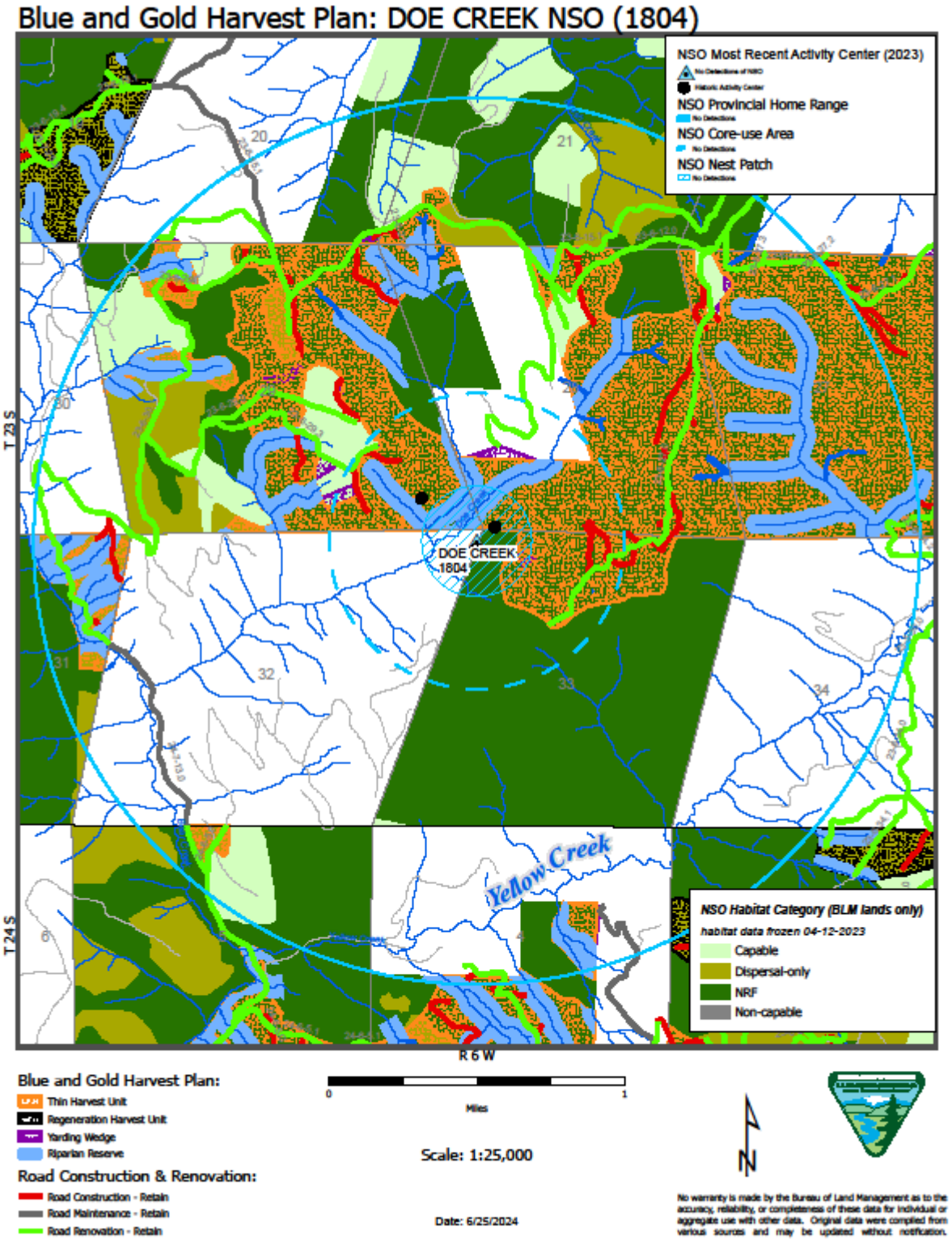
Blue and Gold Harvest Plan: BLUE HOLE NSO (4673)

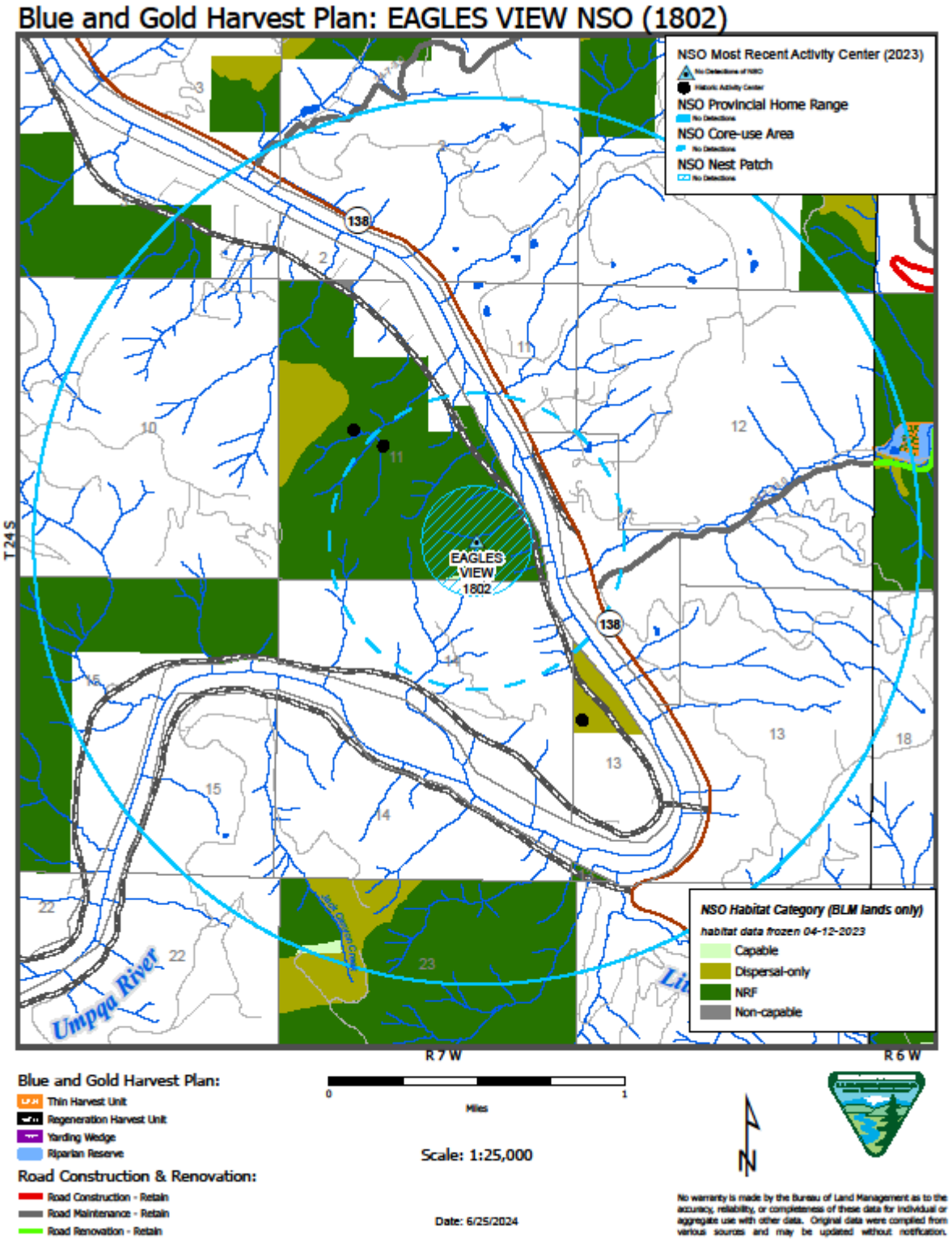


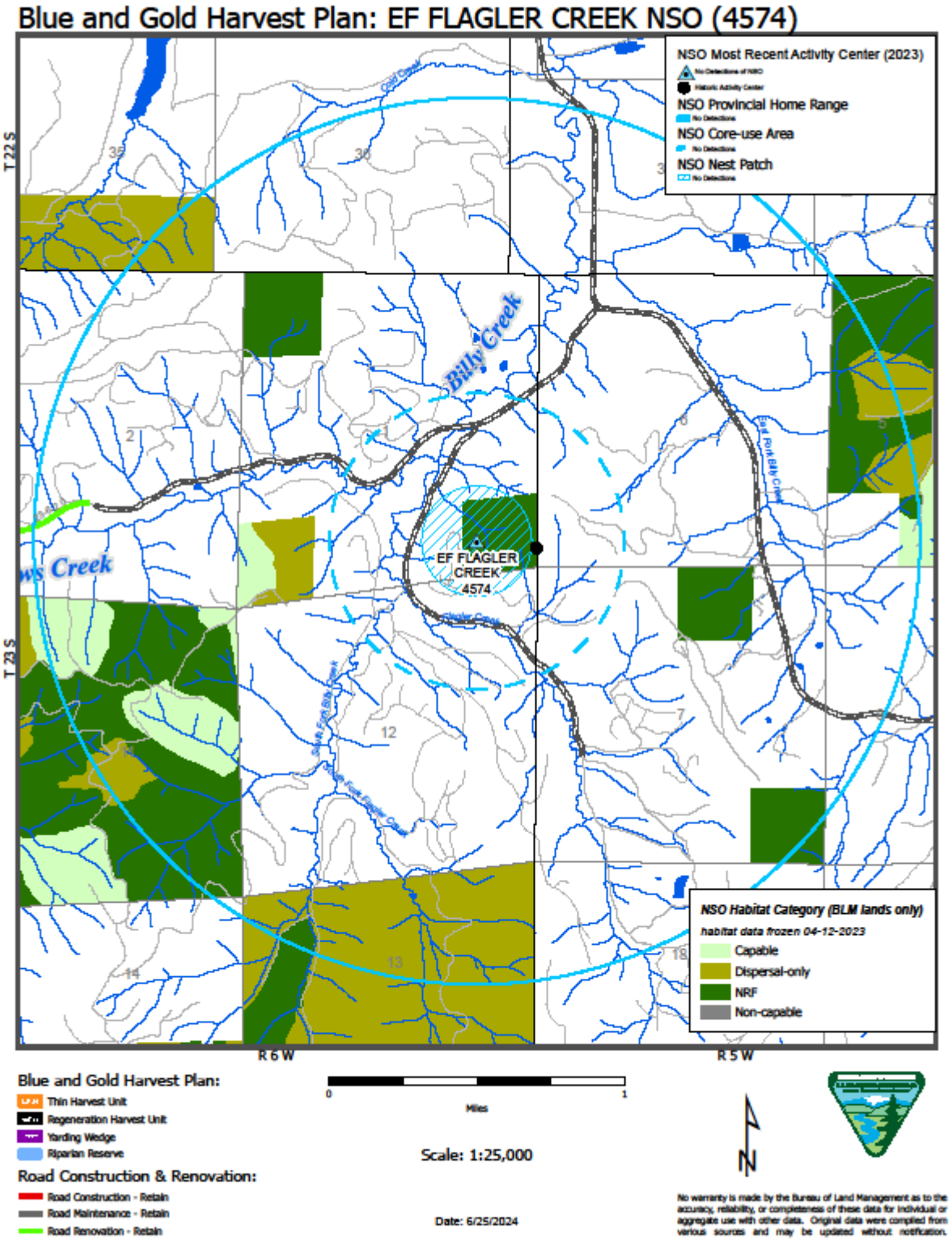

Blue and Gold Harvest Plan: BRADS TRIB NSO (1925)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Brads Creek
BRADS TRIB 1925
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

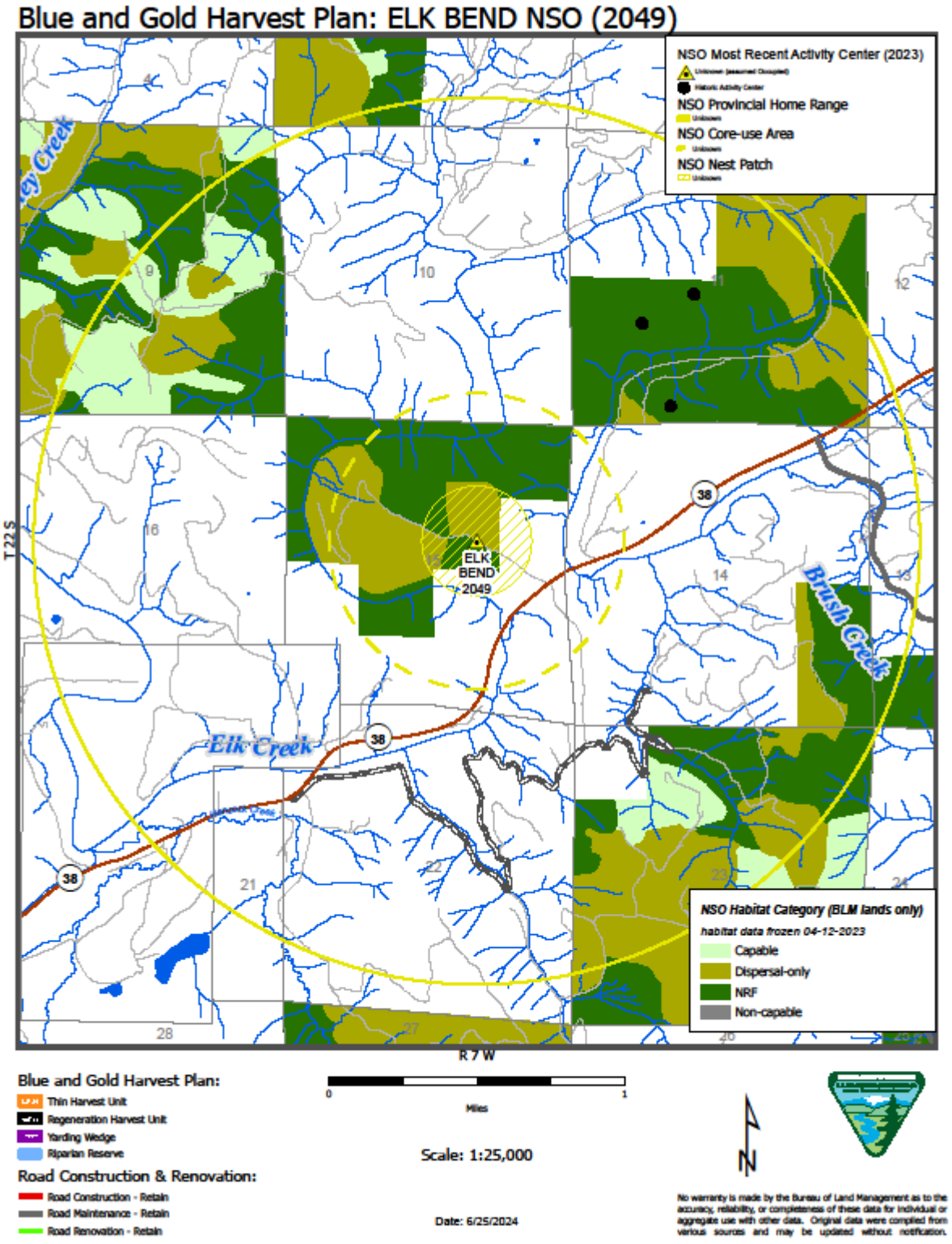

Blue and Gold Harvest Plan: BRUSH HEADWATERS NSO (2051)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
BRUSH HEADWATERS 2051
T 23 S
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

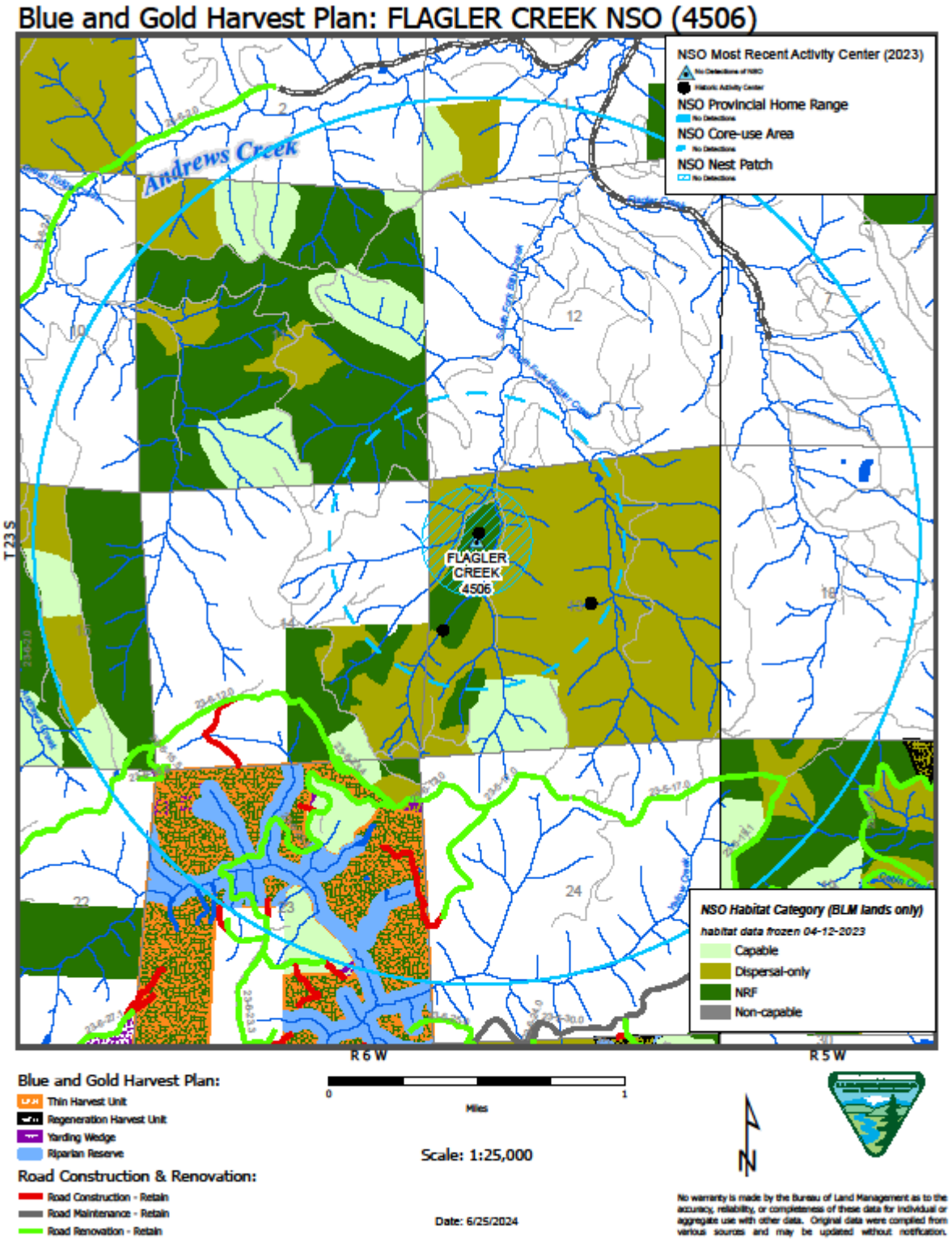

Blue and Gold Harvest Plan: DEADMAN BUTTE NSO (0267)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
DEADMAN BUTTE
0267
Brush Creek
T 22 S
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

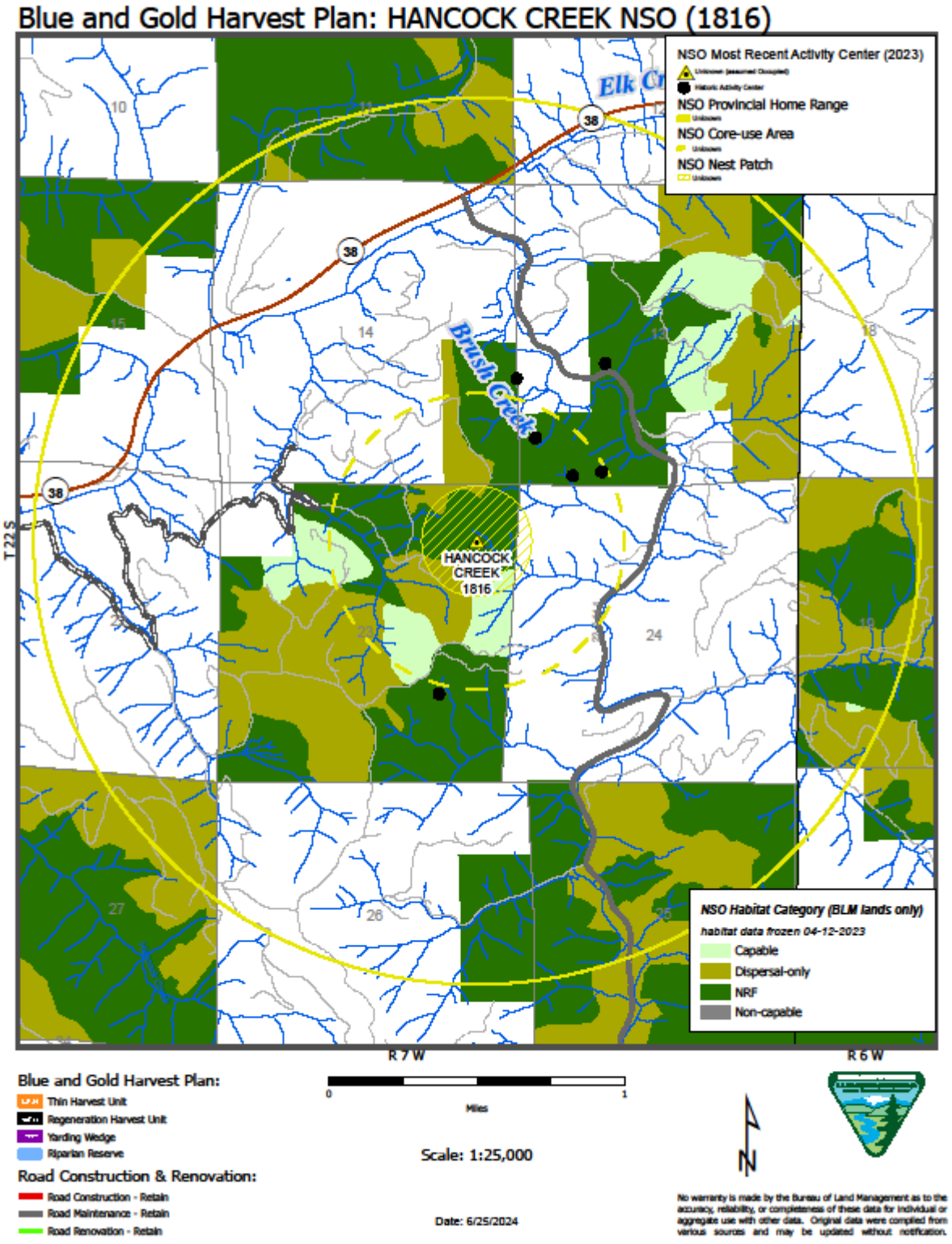

Blue and Gold Harvest Plan: DOE CREEK NSO (1804)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
DOE CREEK
1804
Yellow Creek
T 23 S
T 24 S
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

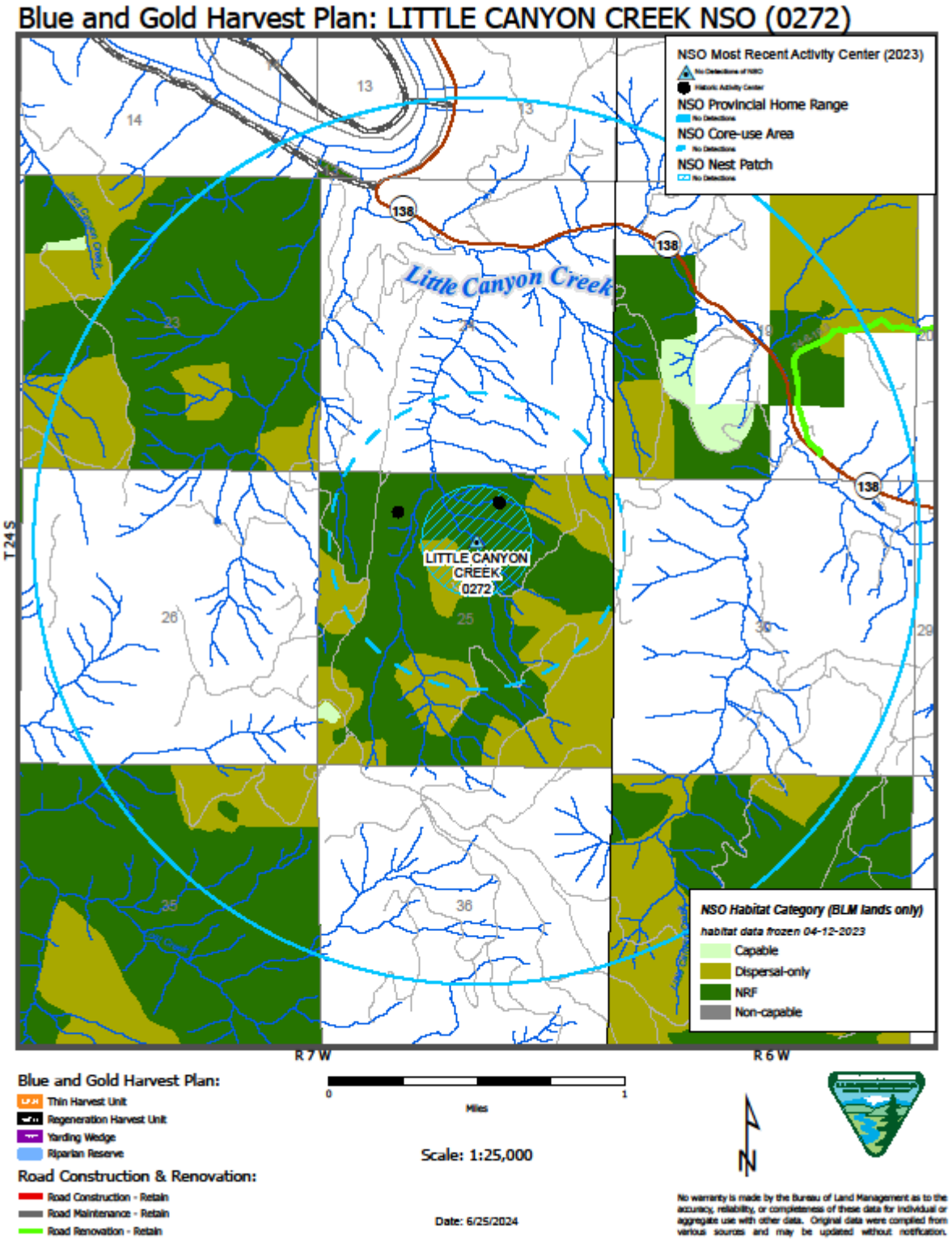

Blue and Gold Harvest Plan: EAGLES VIEW NSO (1802)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
EAGLES VIEW 1802
138
T 24 S
R 7 W
R 6 W
Umpqa River
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

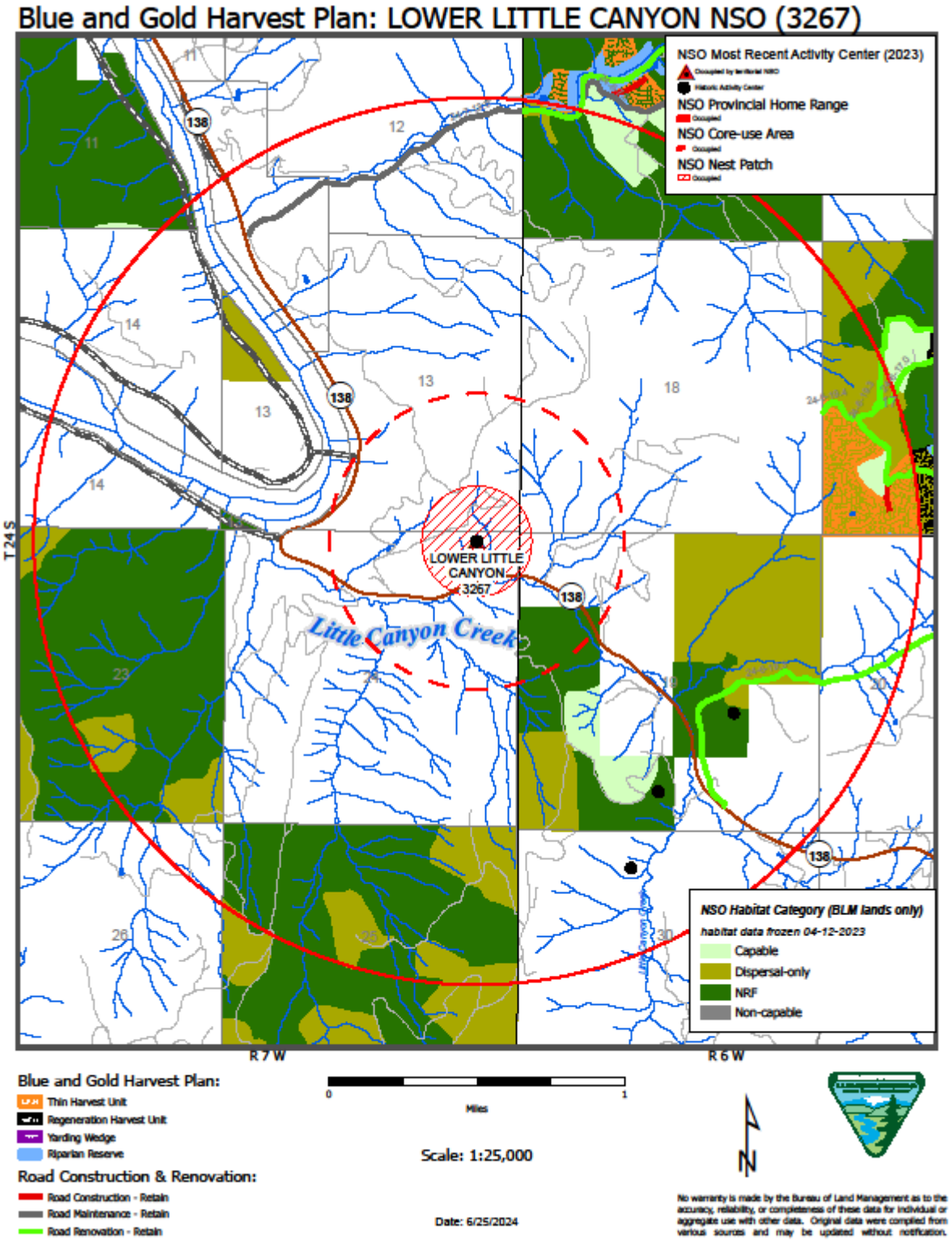

Blue and Gold Harvest Plan: EF FLAGLER CREEK NSO (4574)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Billy Creek
EF FLAGLER CREEK 4574
T 22 S
T 23 S
R 6 W
R 5 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: ELK BEND NSO (2049)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
ELK BEND 2049
Elk Creek
Brush Creek
38
T 22 S
R 7 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: FLAGLER CREEK NSO (4506)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Andrews Creek
FLAGLER CREEK 4506
T 23 S
R 6 W
R 5 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: HANCOCK CREEK NSO (1816)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Elk Cr
Brush Creek
38
HANCOCK CREEK 1816
T 22 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: LITTLE CANYON CREEK NSO (0272)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Little Canyon Creek
LITTLE CANYON CREEK 0272
138
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: LOWER LITTLE CANYON NSO (3267)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
LOWER LITTLE CANYON 3267
Little Canyon Creek
138
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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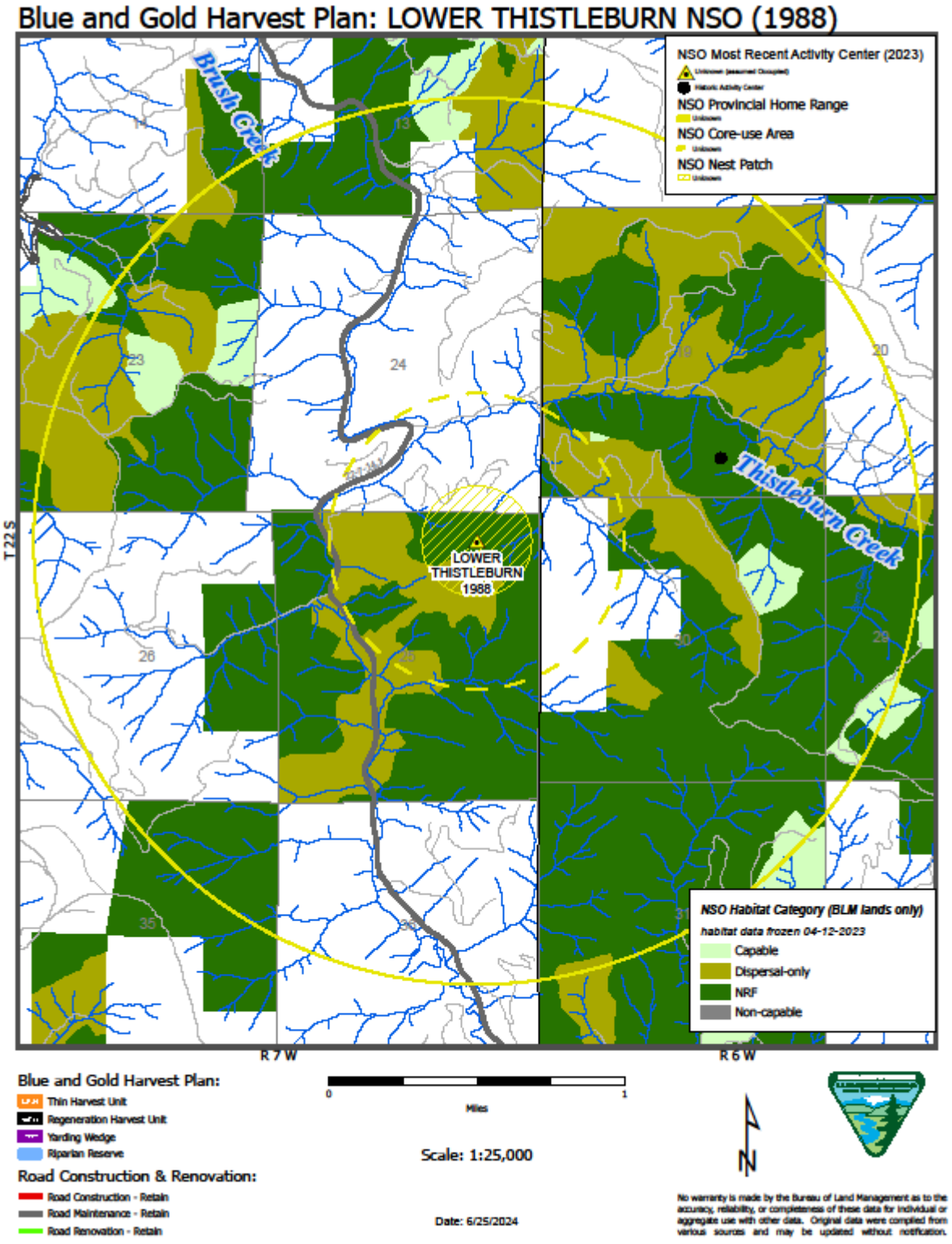
Blue and Gold Harvest Plan: LOWER THISTLEBURN NSO (1988)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Brush Creek
Thistleburn Creek
LOWER THISTLEBURN 1988
T 22 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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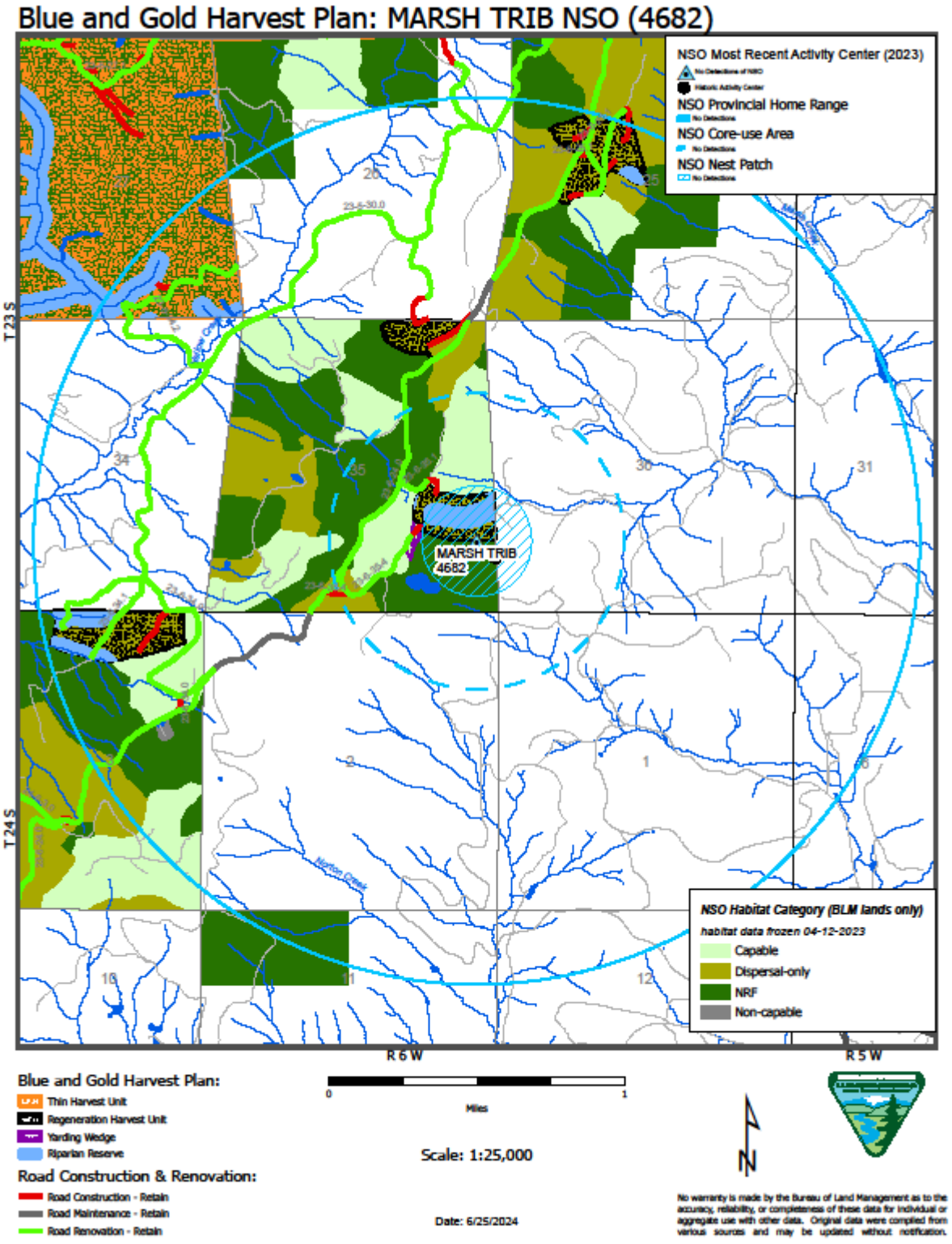
Blue and Gold Harvest Plan: MARSH TRIB NSO (4682)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
MARSH TRIB
4682
T 23 S
T 24 S
R 6 W
R 5 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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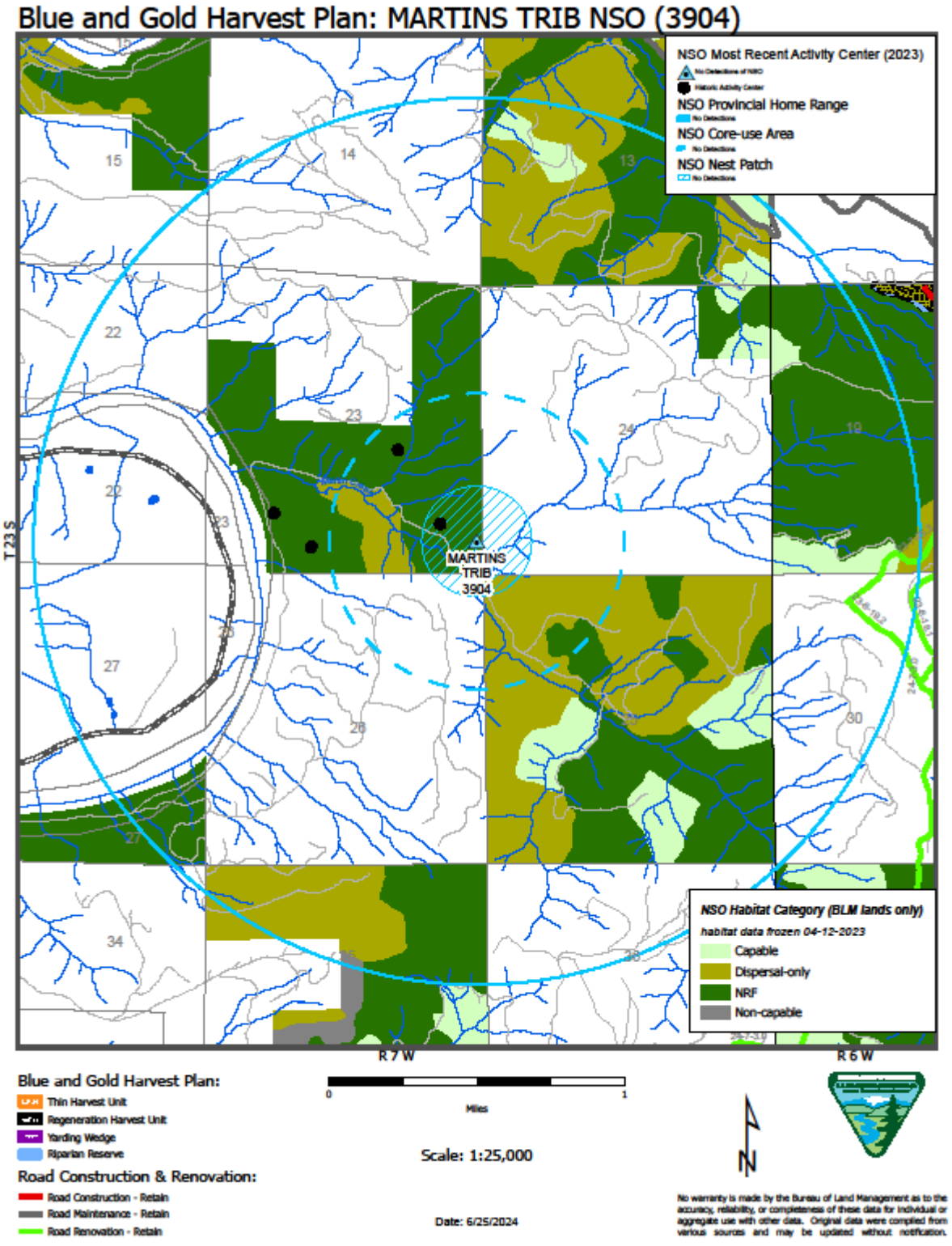
Blue and Gold Harvest Plan: MARTINS TRIB NSO (3904)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
MARTINS TRIB 3904
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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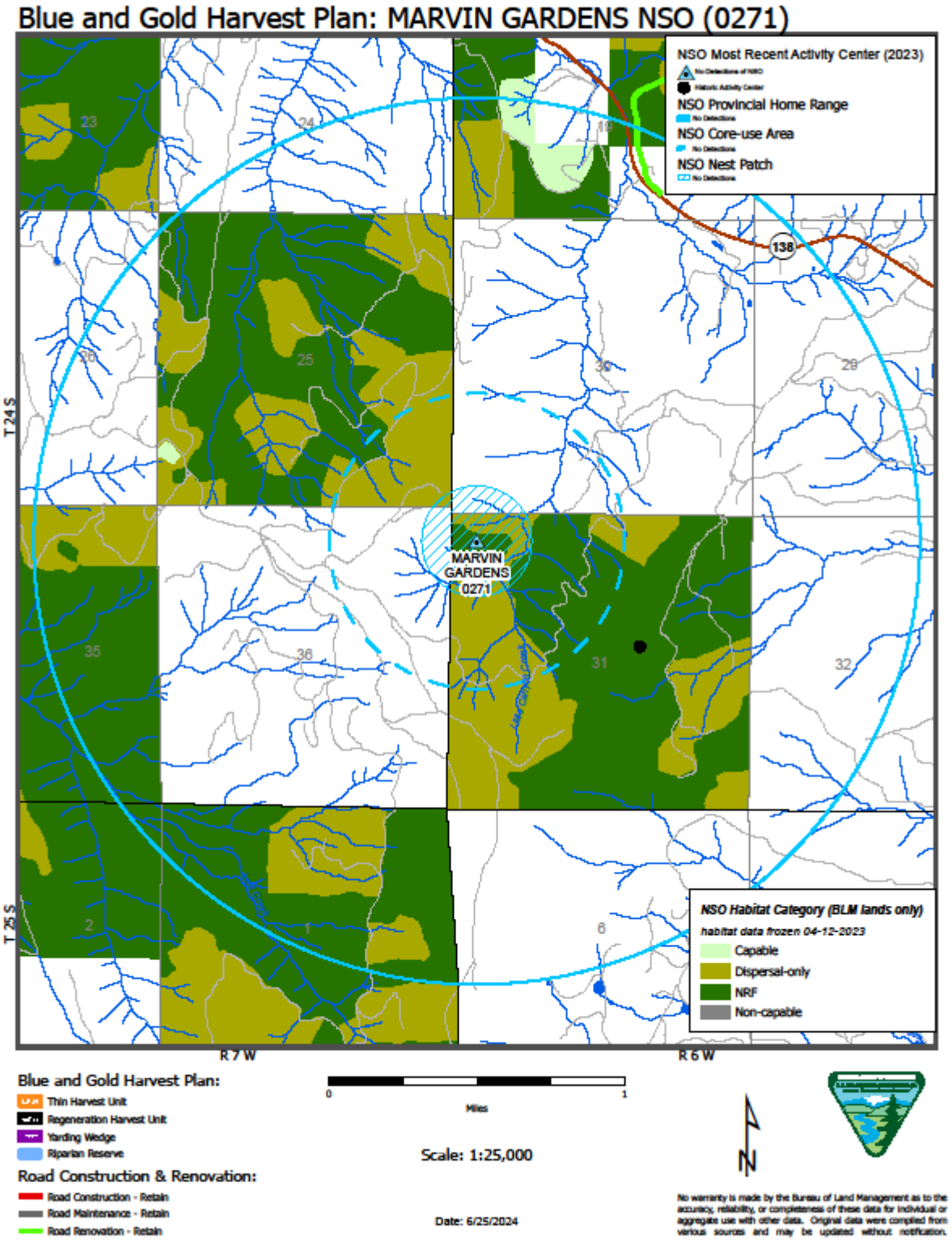
Blue and Gold Harvest Plan: MARVIN GARDENS NSO (0271)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
MARVIN GARDENS 0271
T 24 S
T 25 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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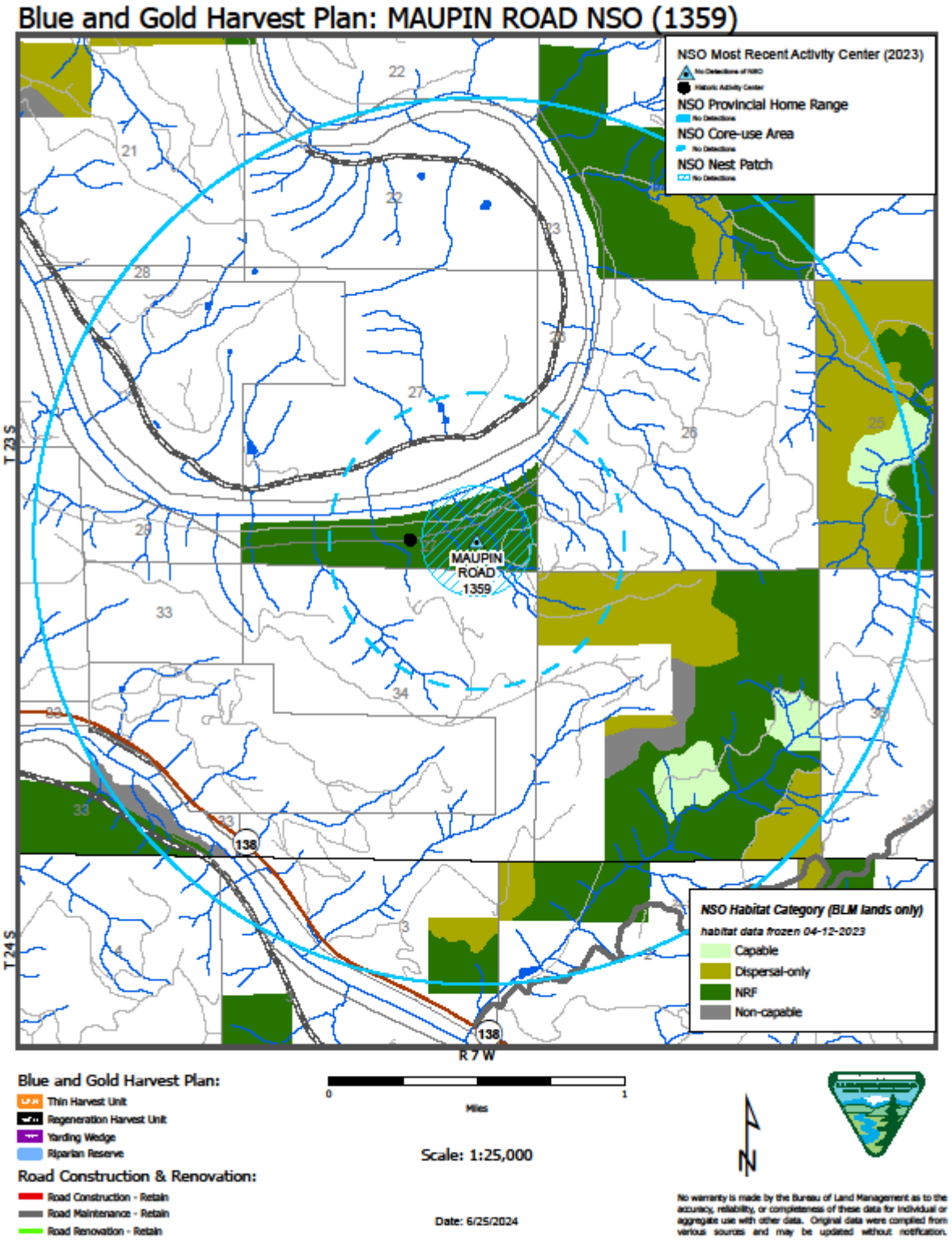
Blue and Gold Harvest Plan: MAUPIN ROAD NSO (1359)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
MAUPIN ROAD 1359
T 23 S
T 24 S
R 7 W
138
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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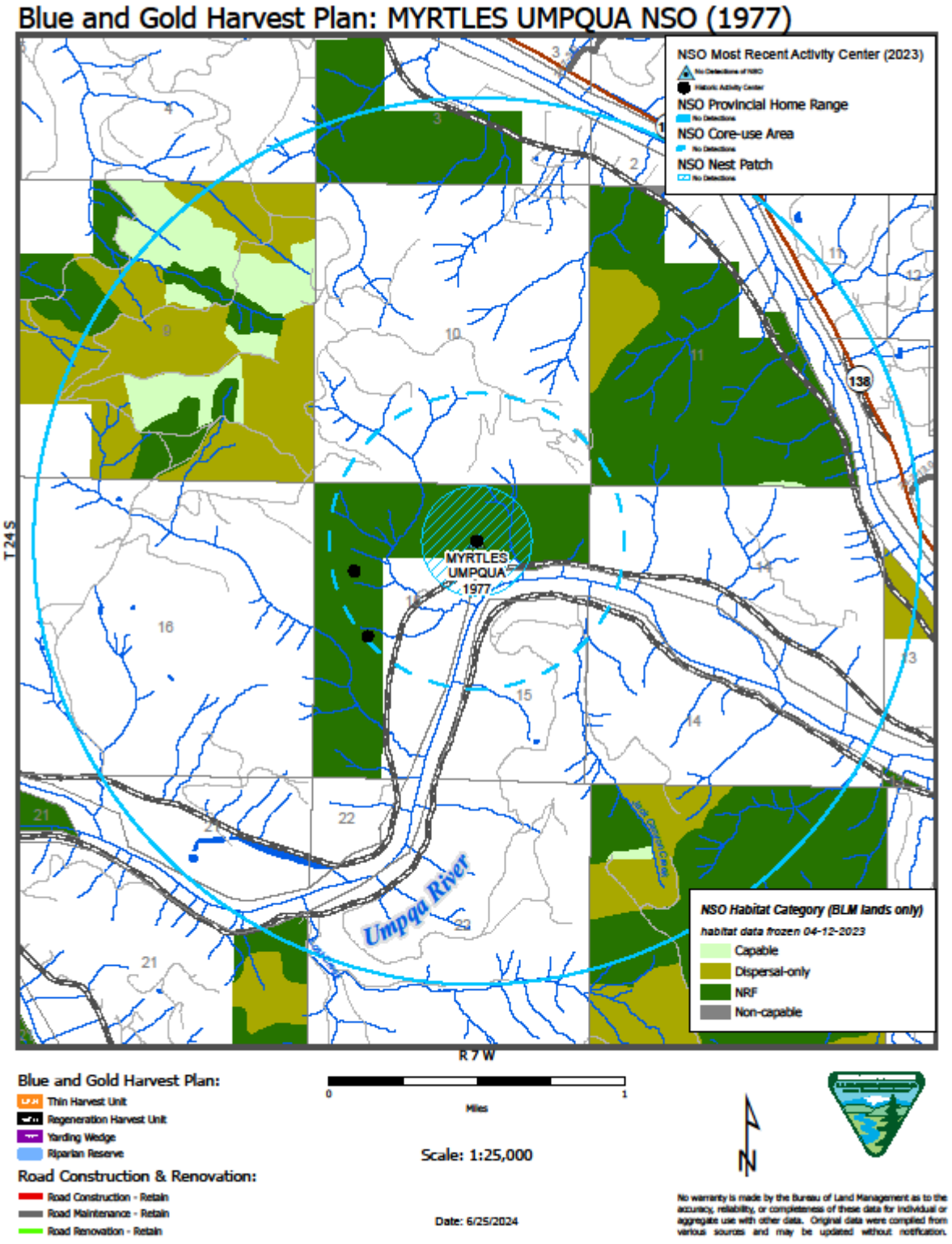
Blue and Gold Harvest Plan: MYRTLES UMPQUA NSO (1977)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
MYRTLES UMPQUA 1977
Umpqua River
T 24 S
R 7 W
138
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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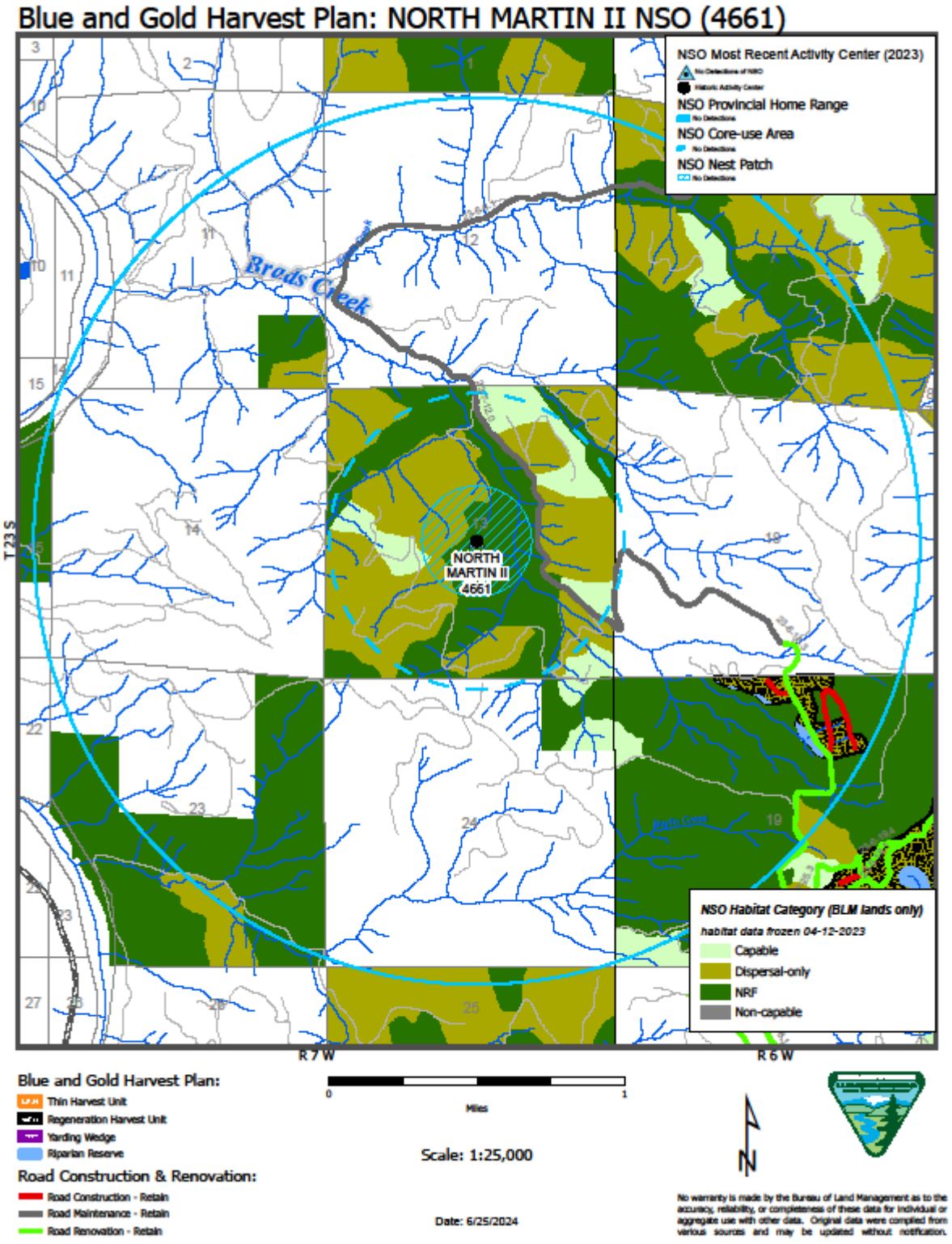
Blue and Gold Harvest Plan: NORTH MARTIN II NSO (4661)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Brads Creek
NORTH MARTIN II 4661
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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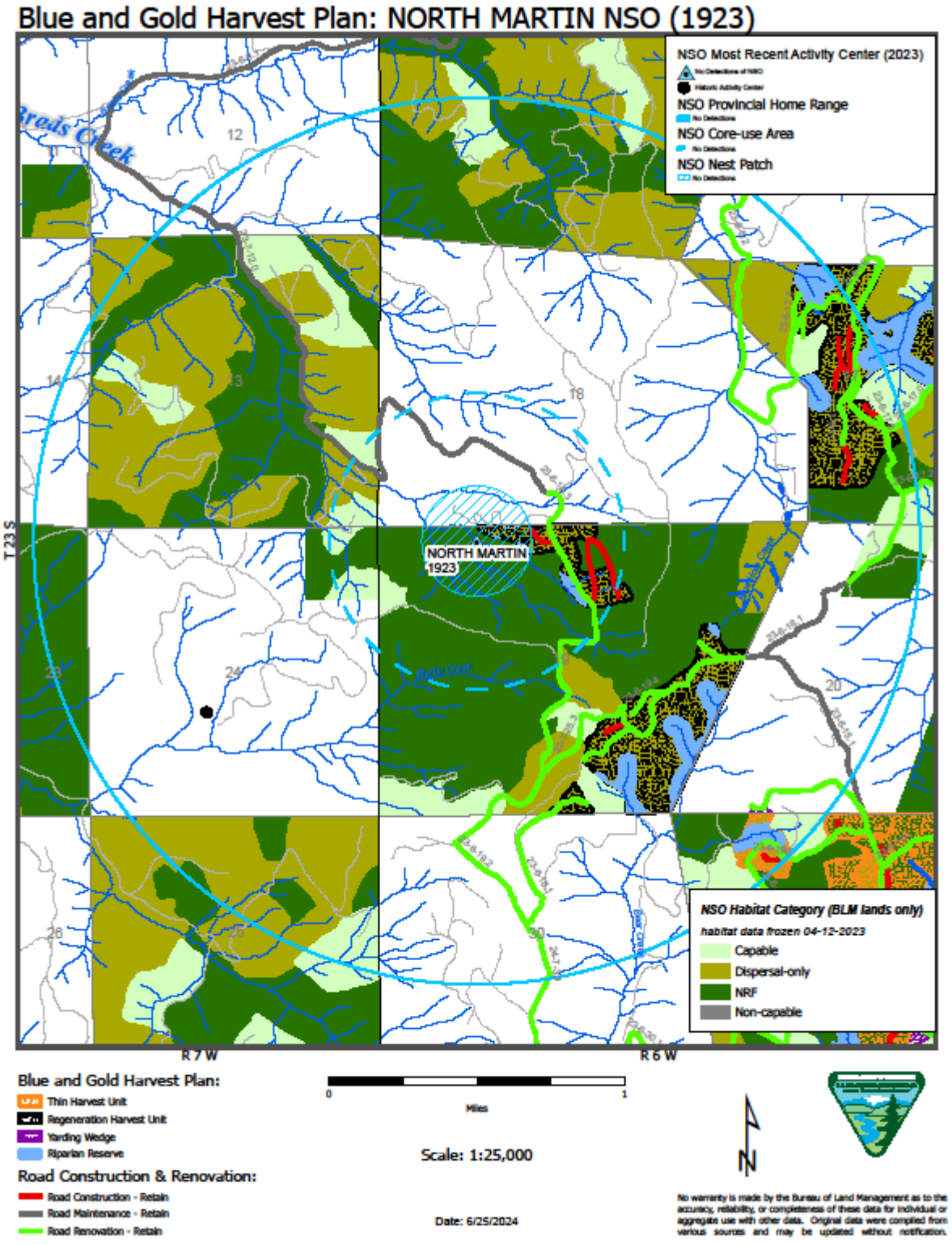
Blue and Gold Harvest Plan: NORTH MARTIN NSO (1923)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
NORTH MARTIN
1923
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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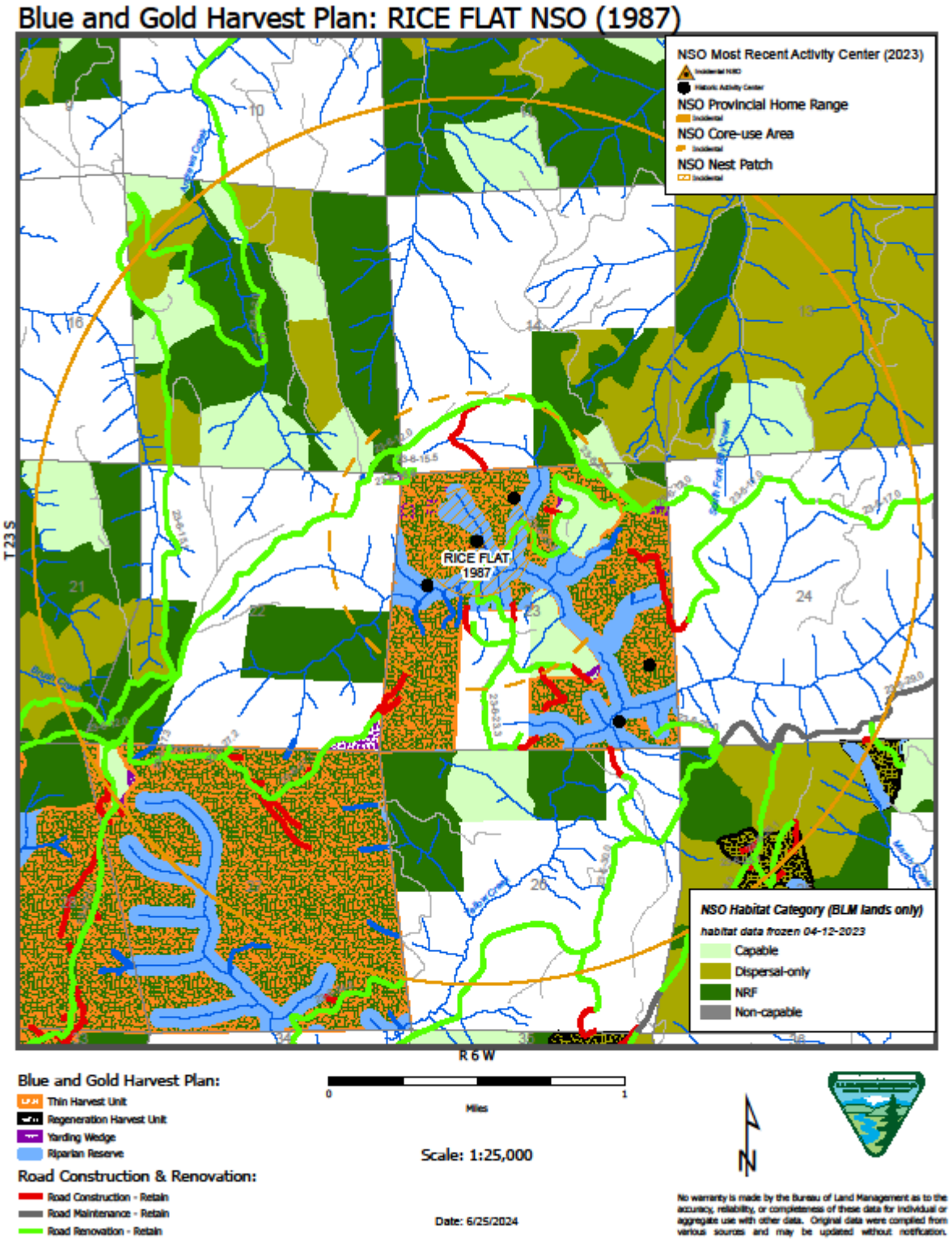
Blue and Gold Harvest Plan: RICE FLAT NSO (1987)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
RICE FLAT
1987
T 23 S
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
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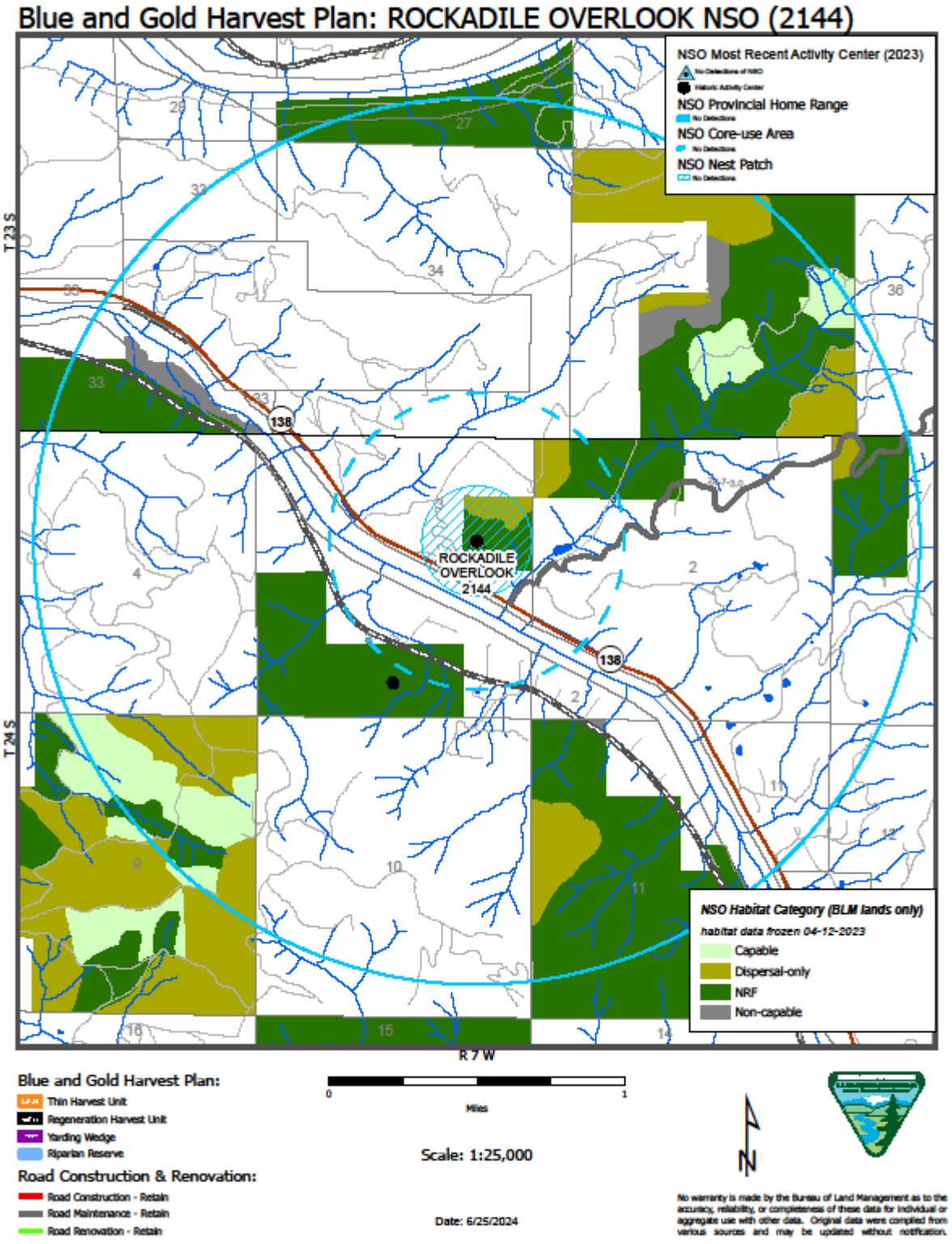
Blue and Gold Harvest Plan: ROCKADILE OVERLOOK NSO (2144)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
ROCKADILE OVERLOOK 2144
T 23 S
T 24 S
R 7 W
138
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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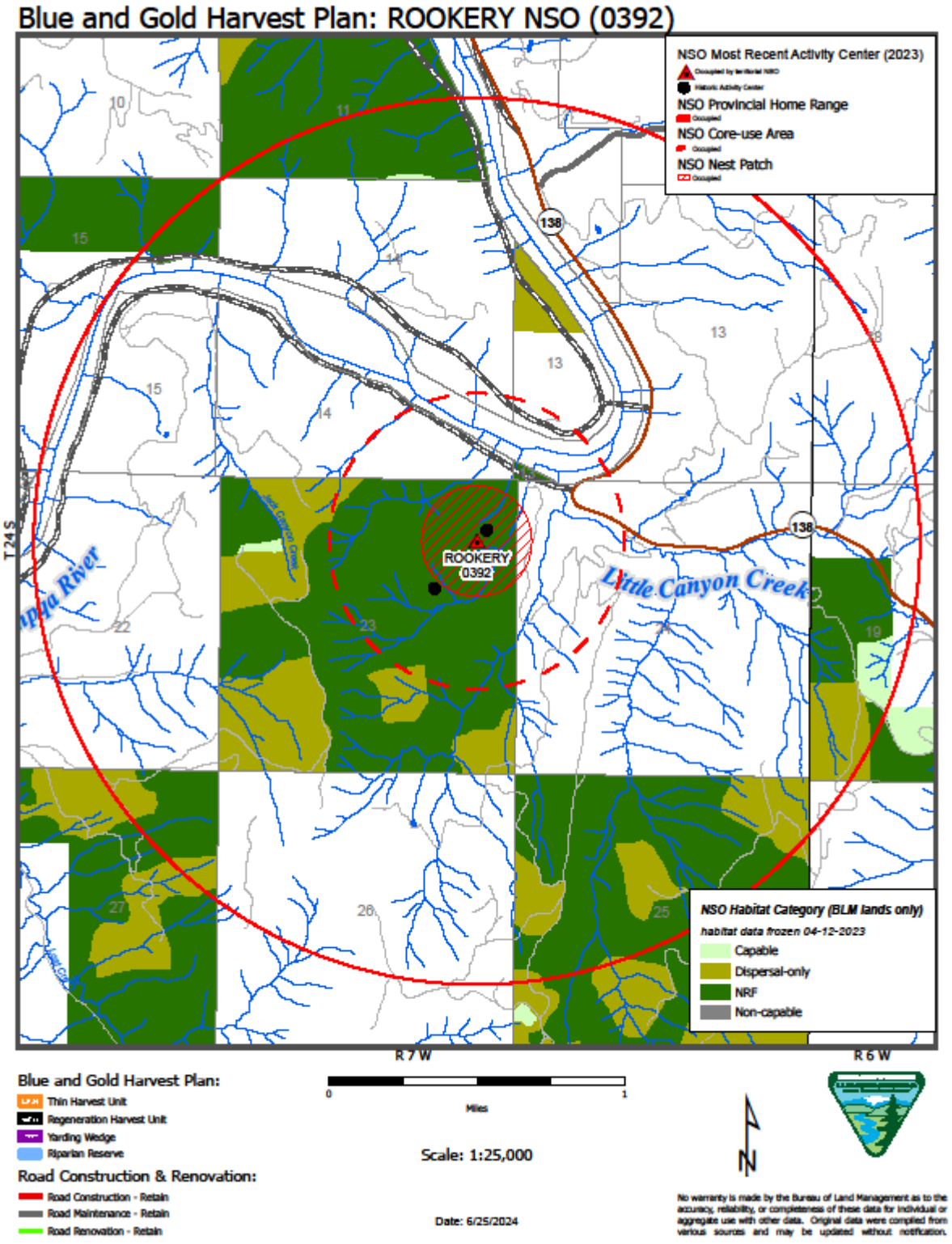
Blue and Gold Harvest Plan: ROOKERY NSO (0392)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
ROOKERY
0392
Little Canyon Creek
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
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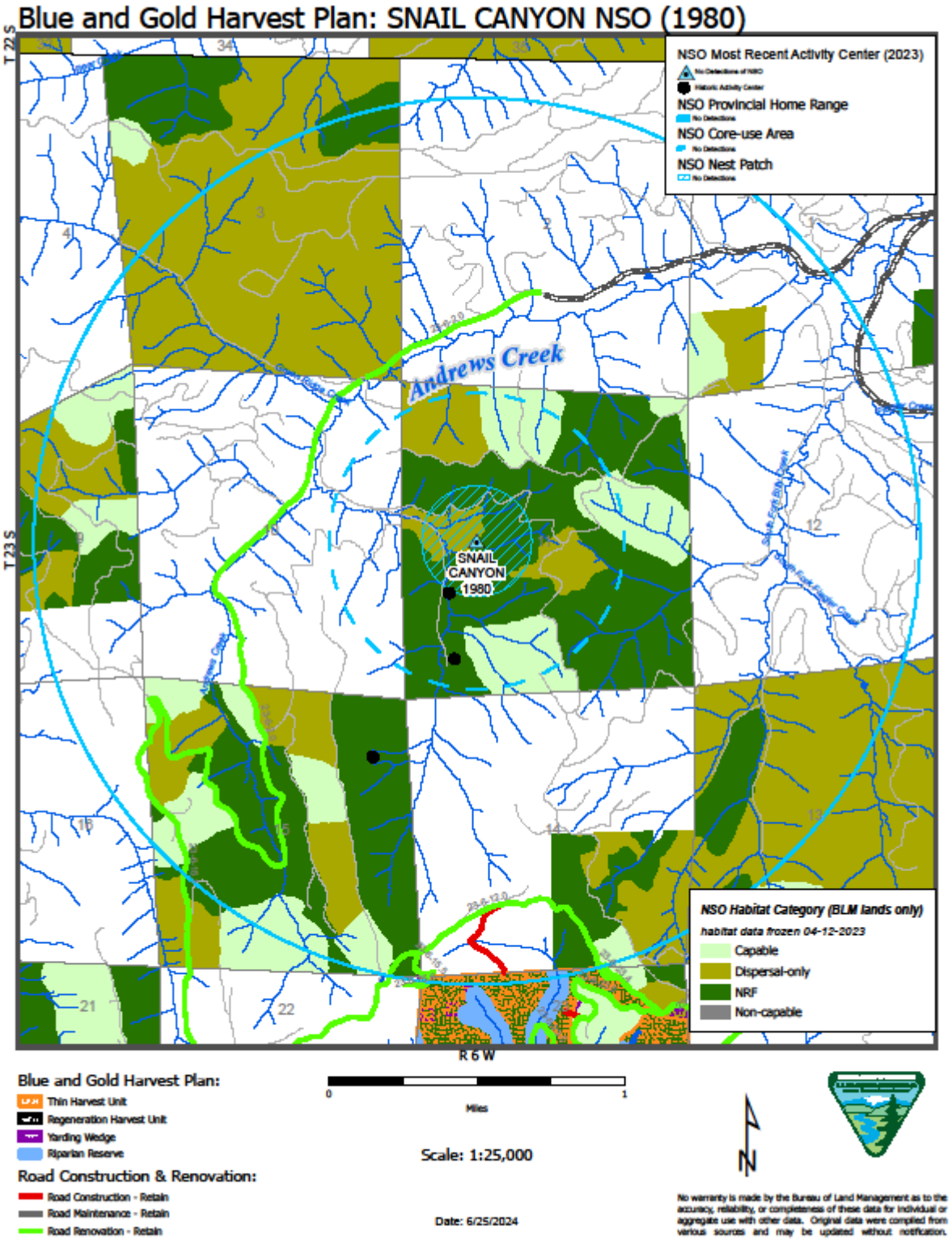
Blue and Gold Harvest Plan: SNAIL CANYON NSO (1980)
T 22 S
T 23 S
R 6 W
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Andrews Creek
SNAIL CANYON 1980
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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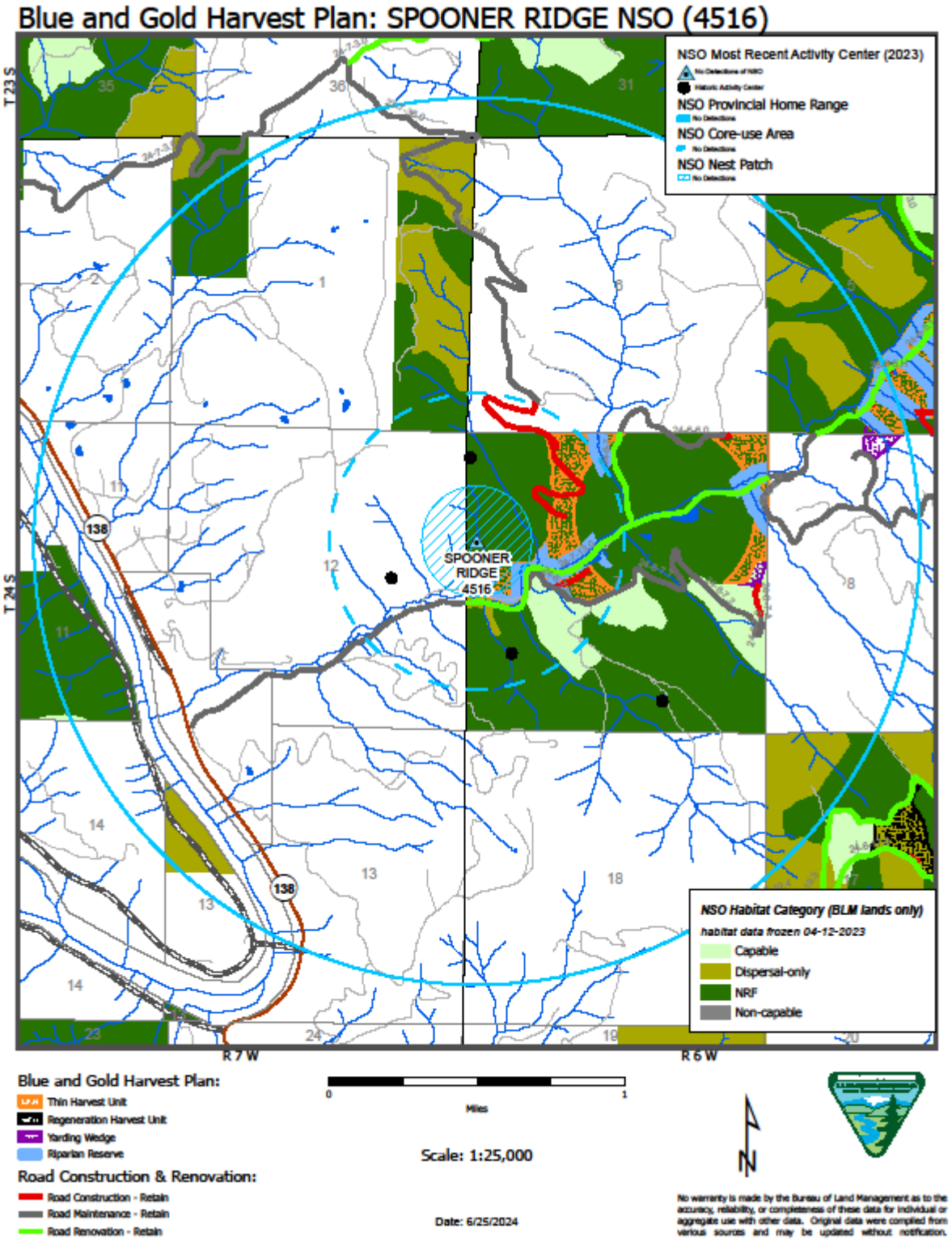
Blue and Gold Harvest Plan: SPOONER RIDGE NSO (4516)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
SPOONER RIDGE 4516
T 23 S
T 24 S
R 7 W
R 6 W
138
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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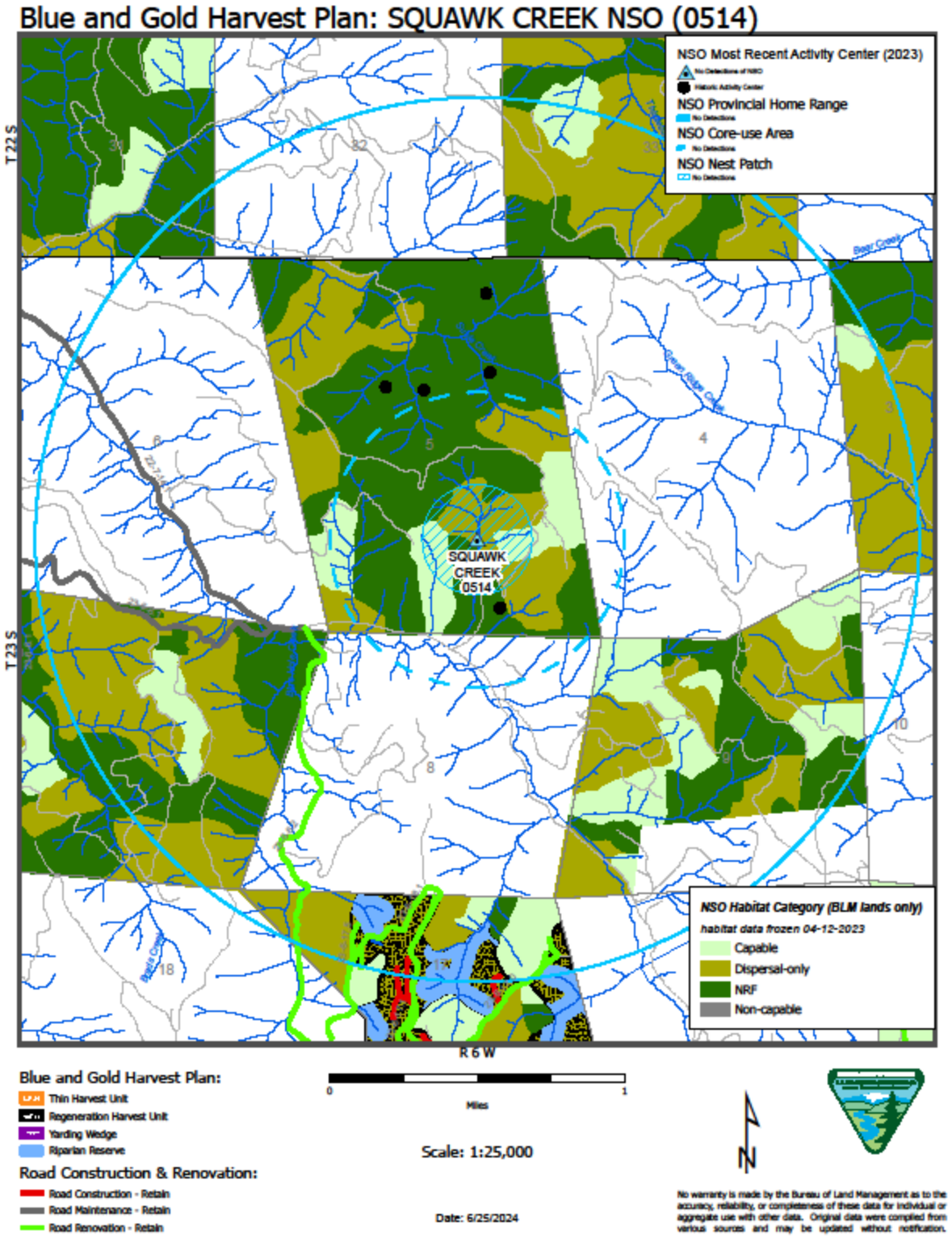
Blue and Gold Harvest Plan: SQUAWK CREEK NSO (0514)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
SQUAWK CREEK 0514
T22S
T23S
R6W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
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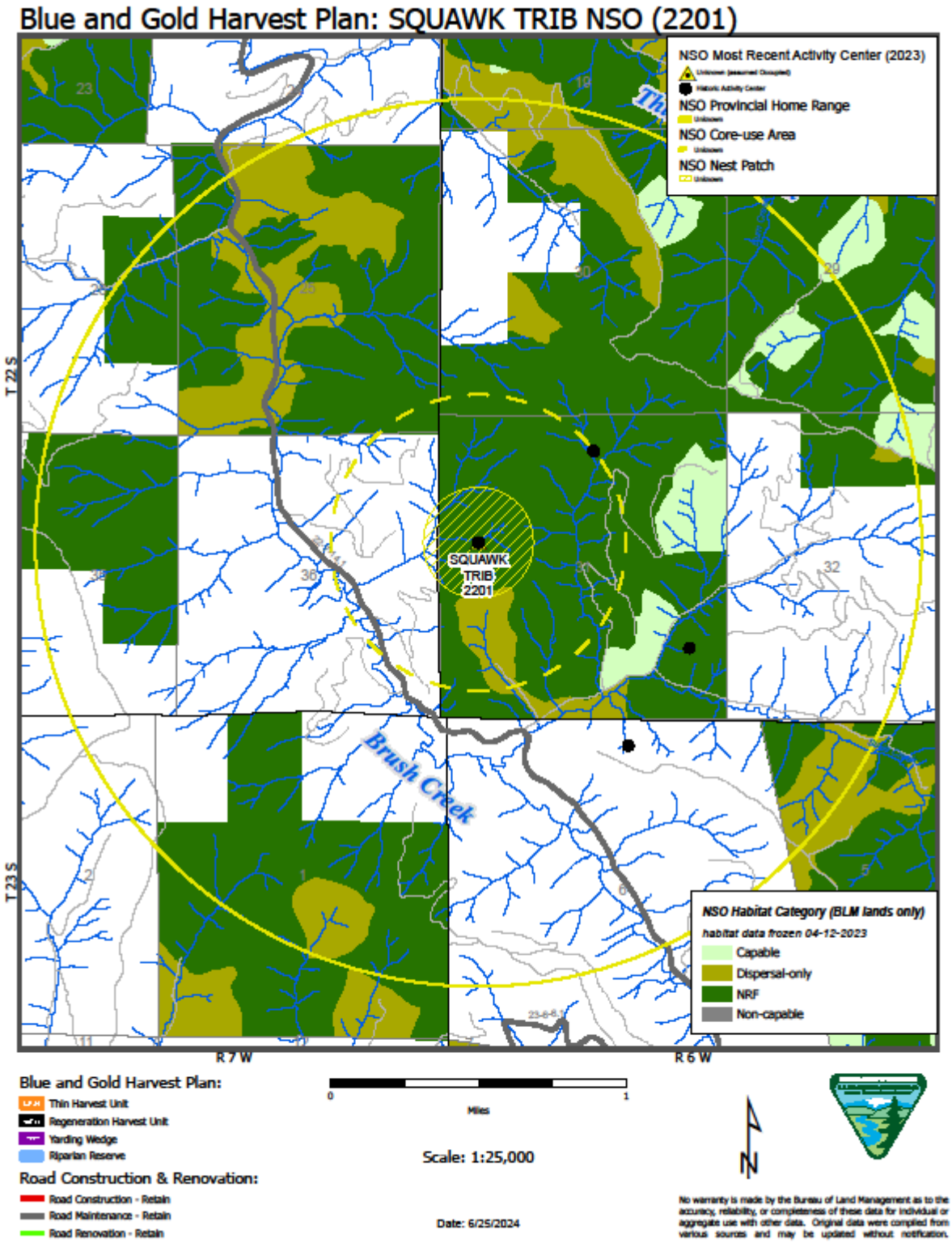
Blue and Gold Harvest Plan: SQUAWK TRIB NSO (2201)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
SQUAWK TRIB 2201
Brush Creek
T 22 S
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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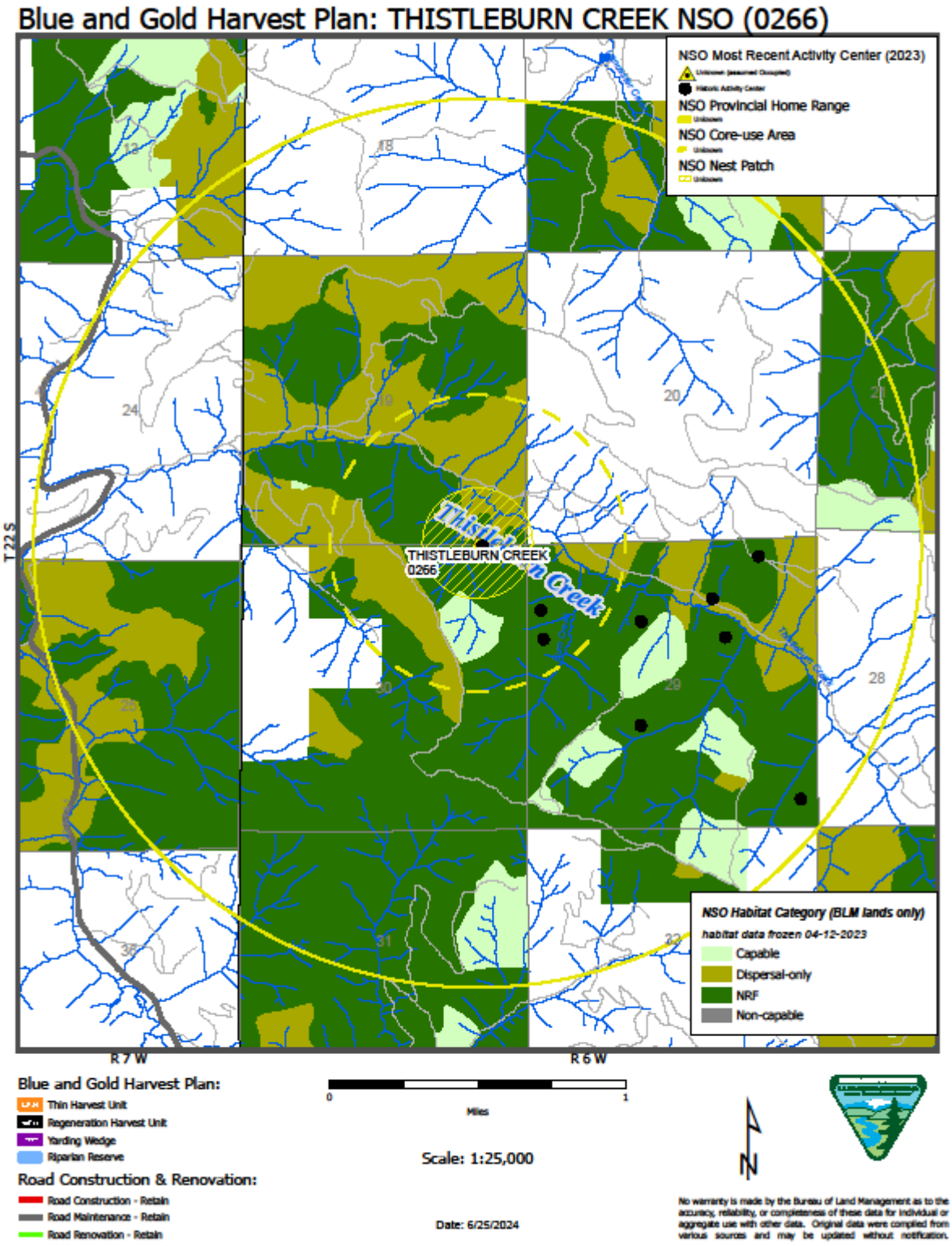
Blue and Gold Harvest Plan: THISTLEBURN CREEK NSO (0266)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
THISTLEBURN CREEK
0266
T22S
R7W
R6W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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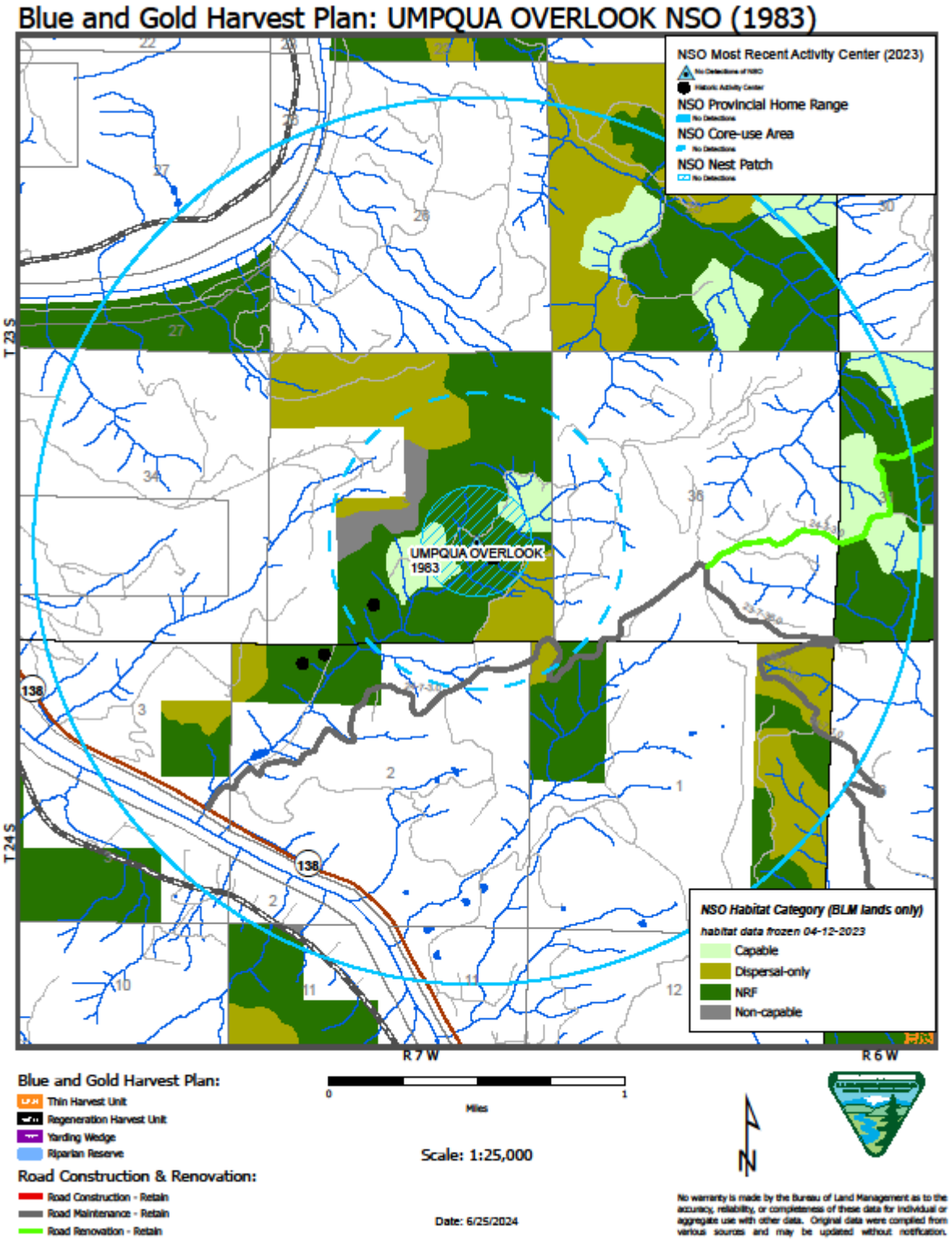
Blue and Gold Harvest Plan: UMPQUA OVERLOOK NSO (1983)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
UMPQUA OVERLOOK
1983
T 23 S
T 24 S
R 7 W
R 6 W
138
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
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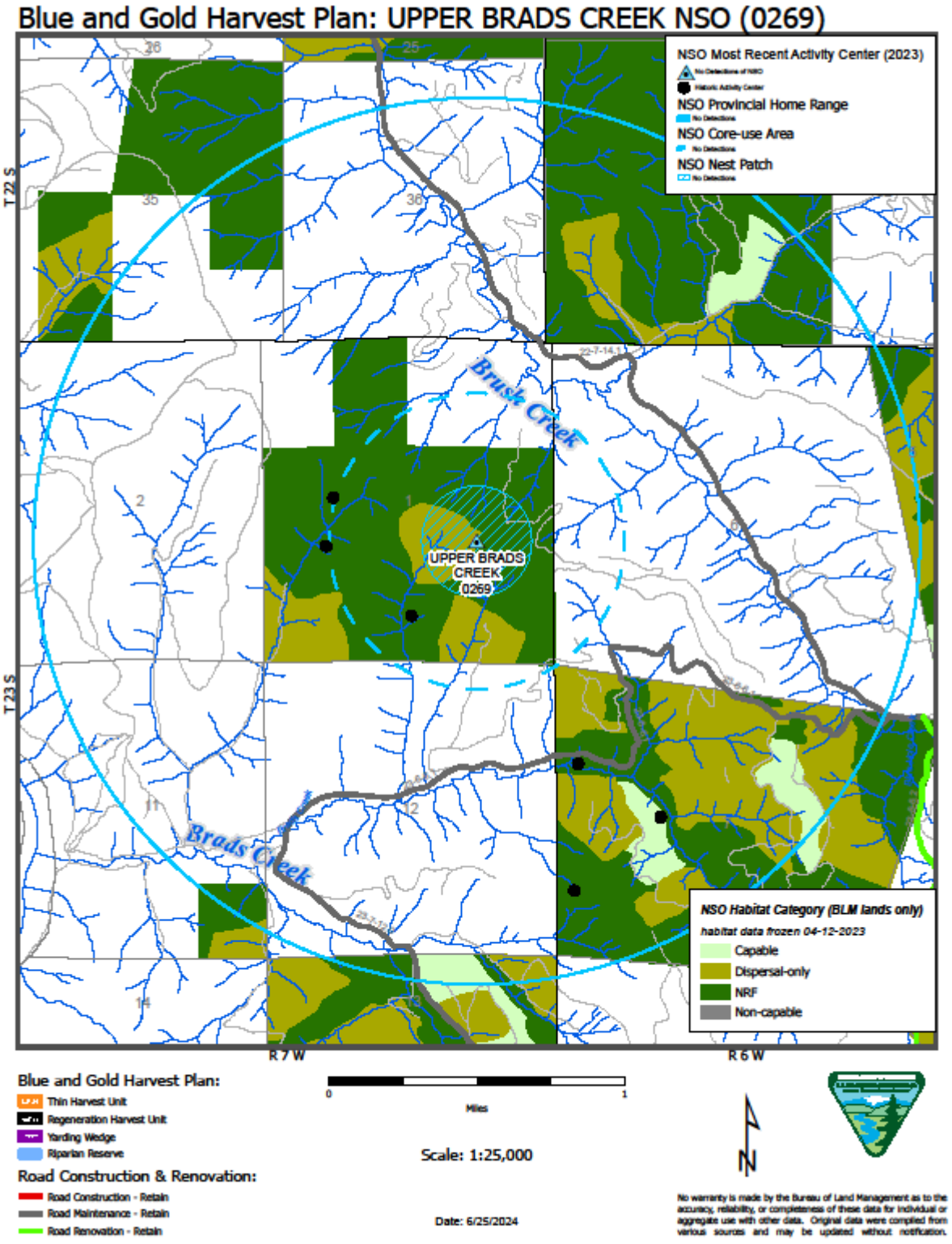
Blue and Gold Harvest Plan: UPPER BRADS CREEK NSO (0269)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
Brush Creek
Brads Creek
UPPER BRADS CREEK 0269
T 22 S
T 23 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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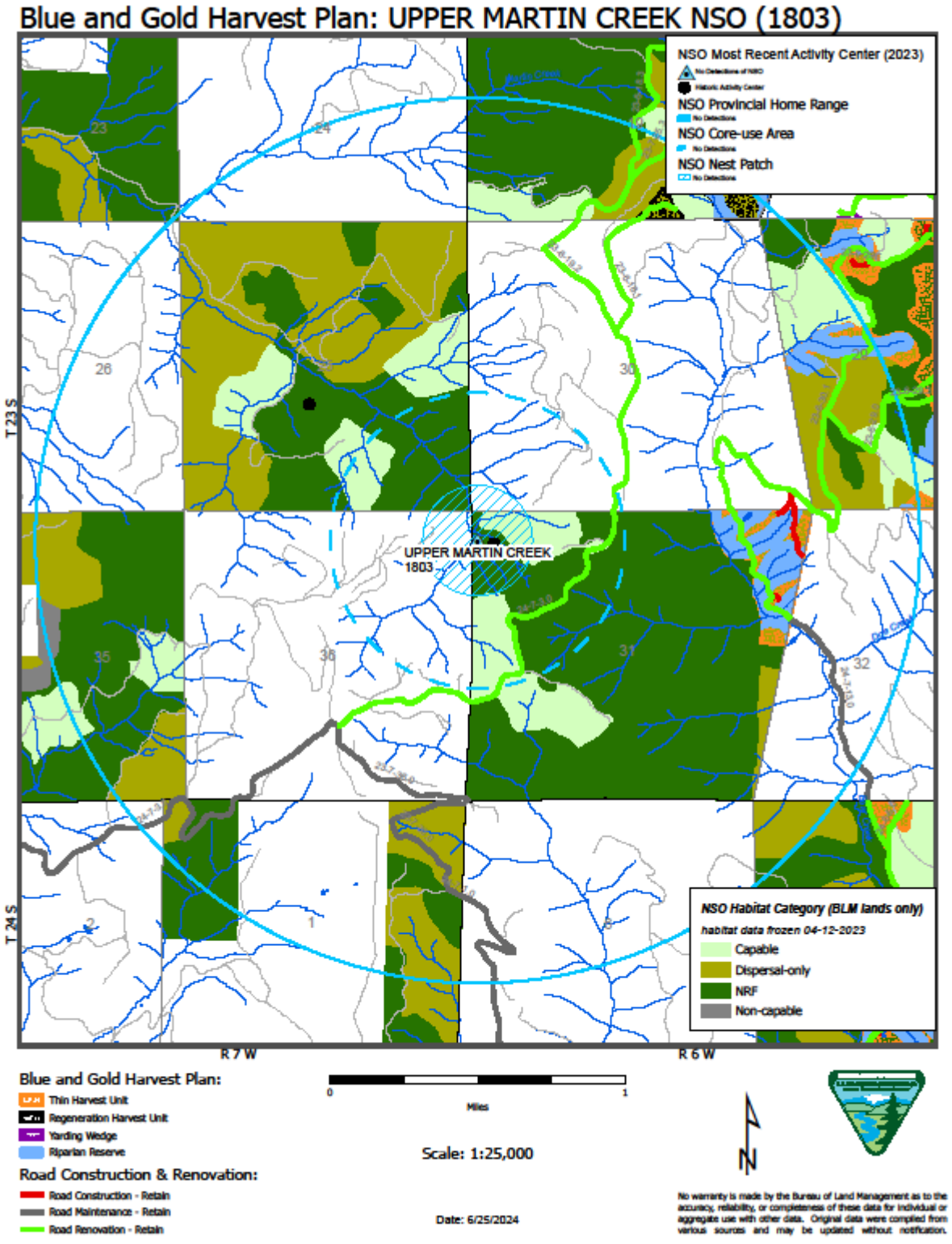
Blue and Gold Harvest Plan: UPPER MARTIN CREEK NSO (1803)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
UPPER MARTIN CREEK
1803
T 23 S
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
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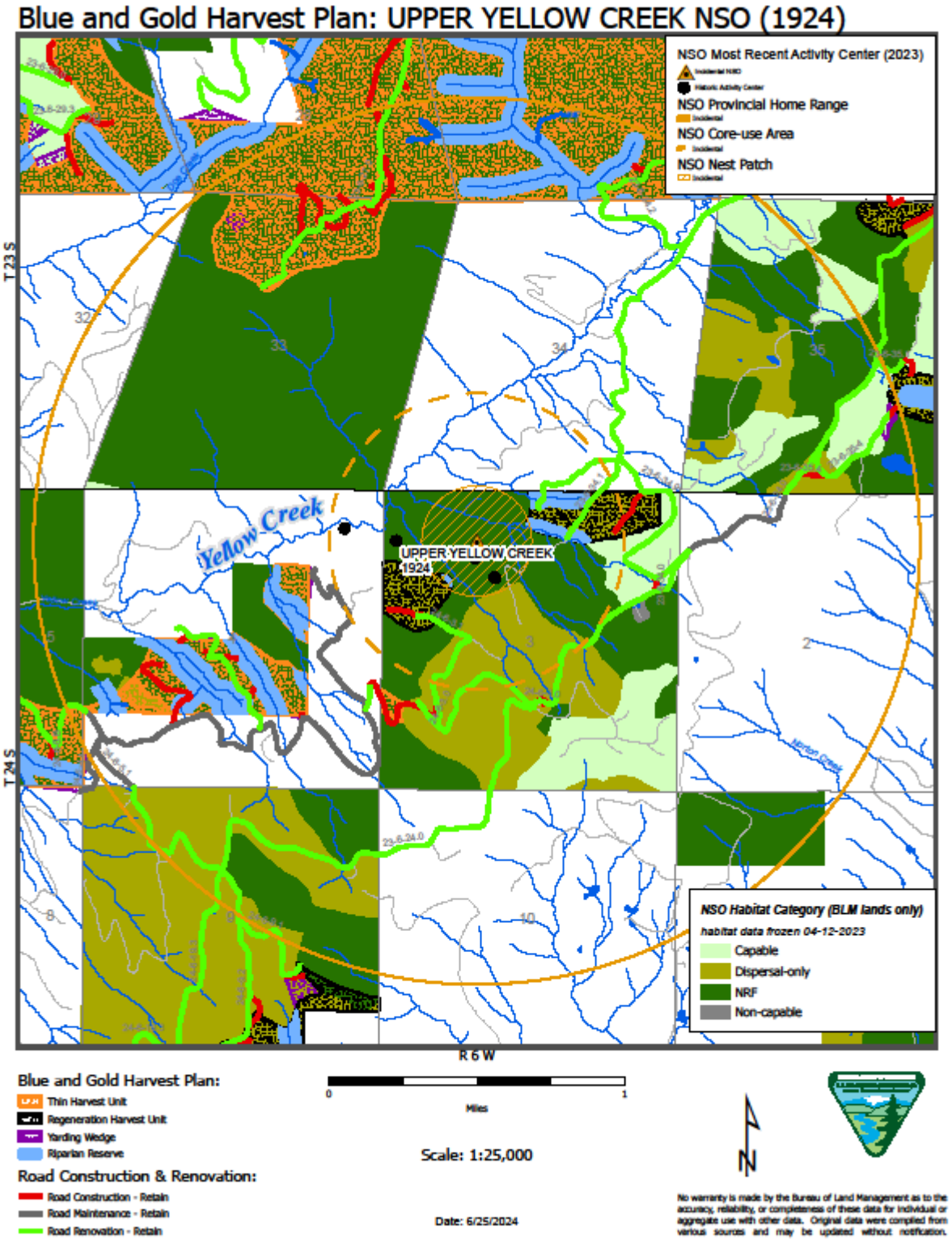
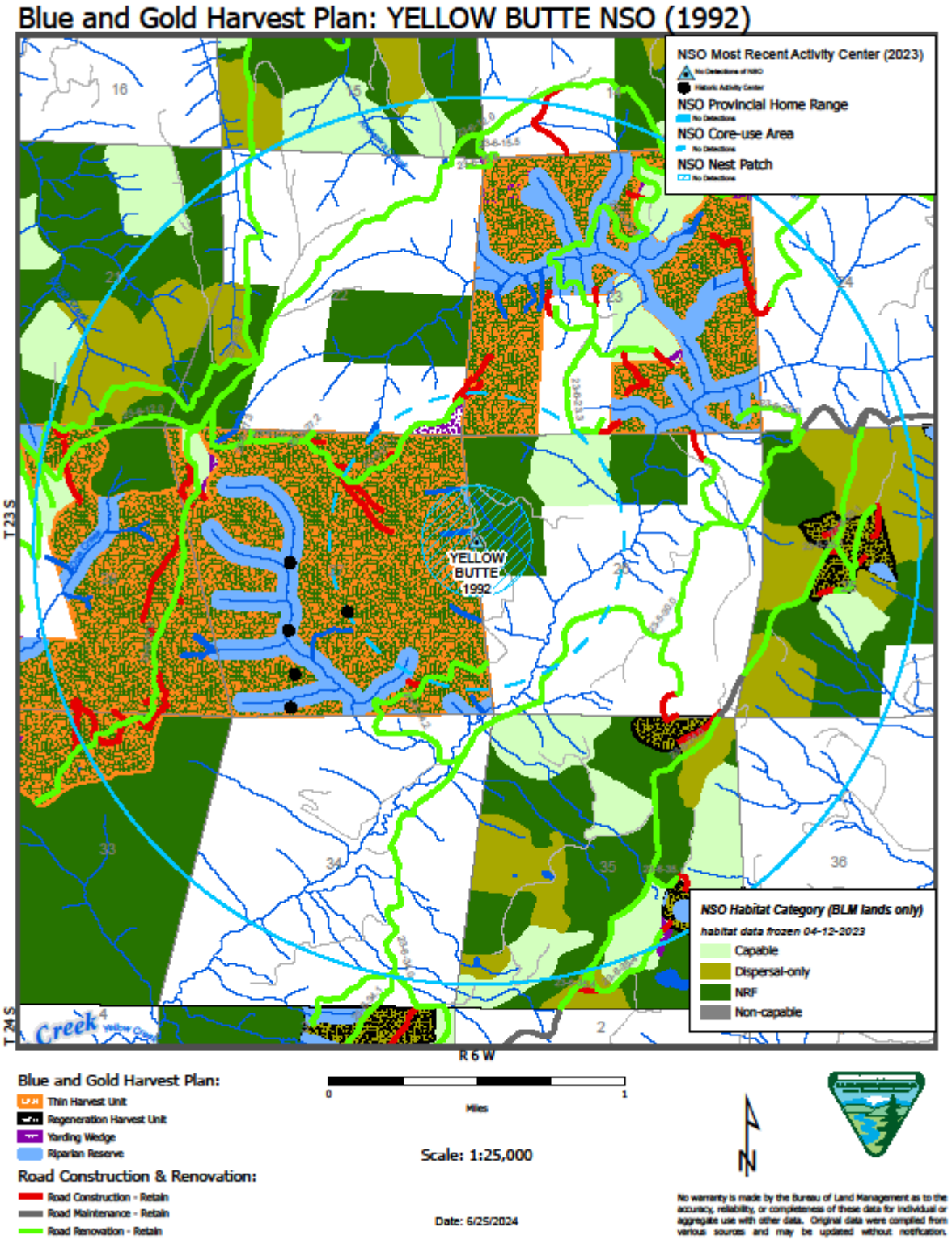
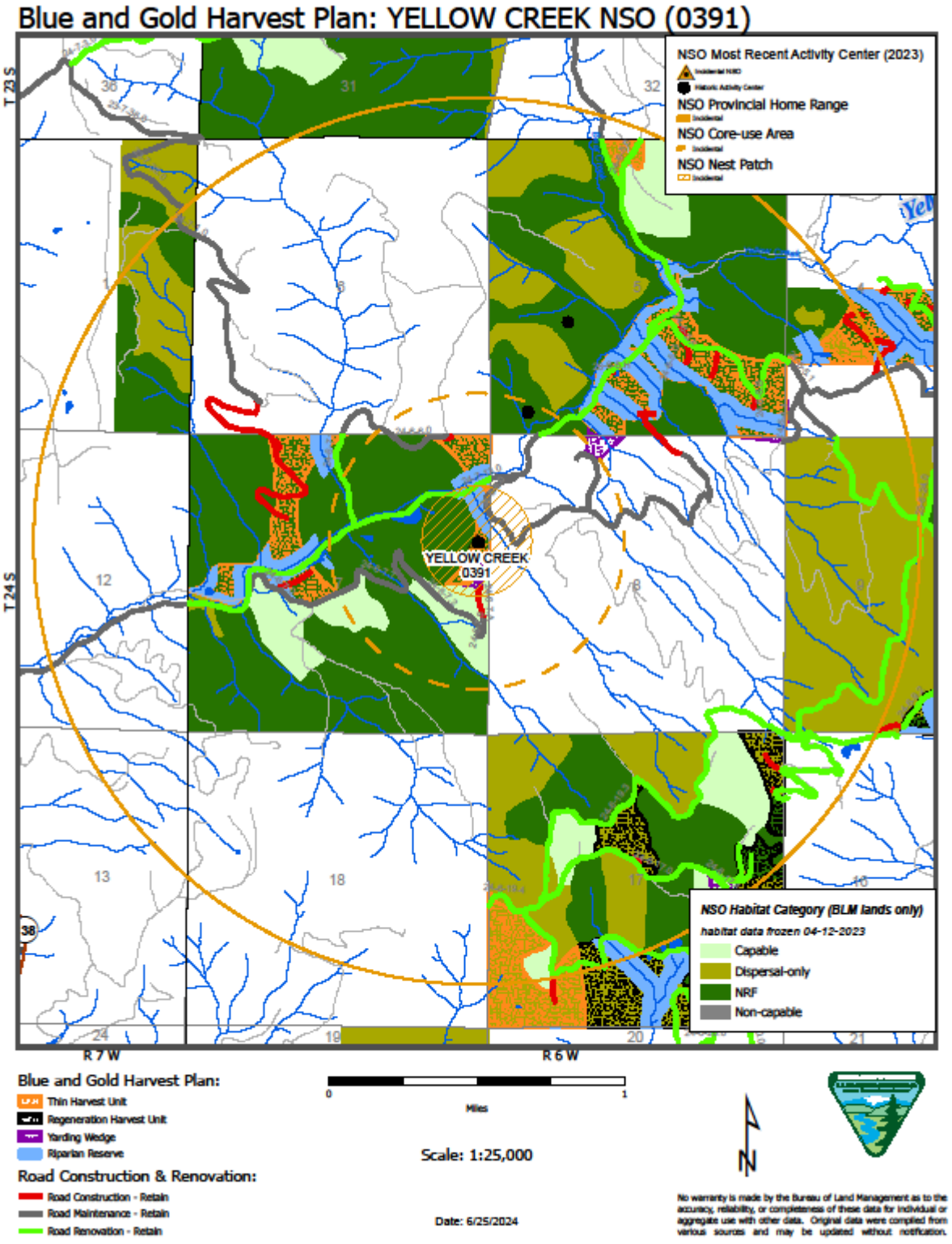
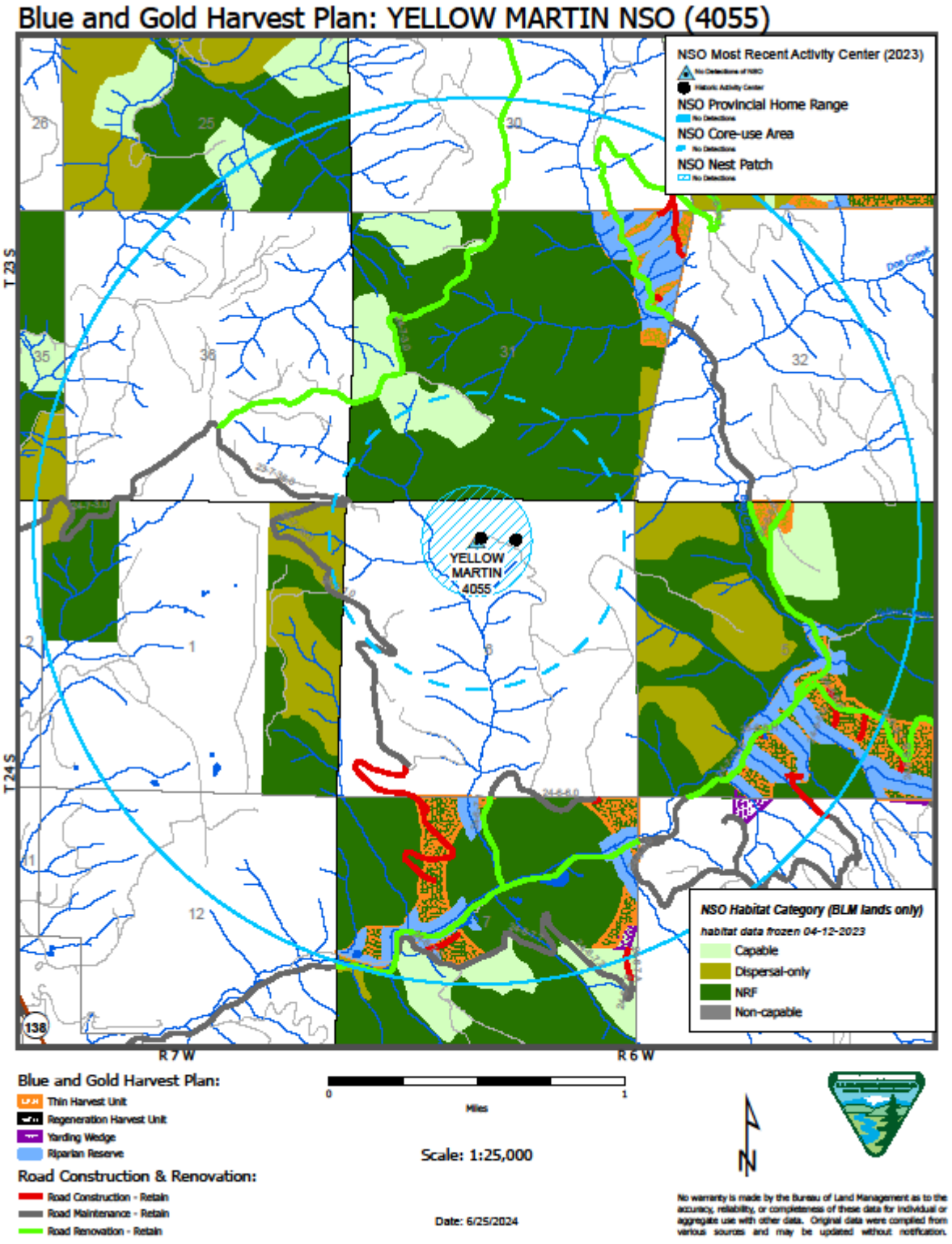
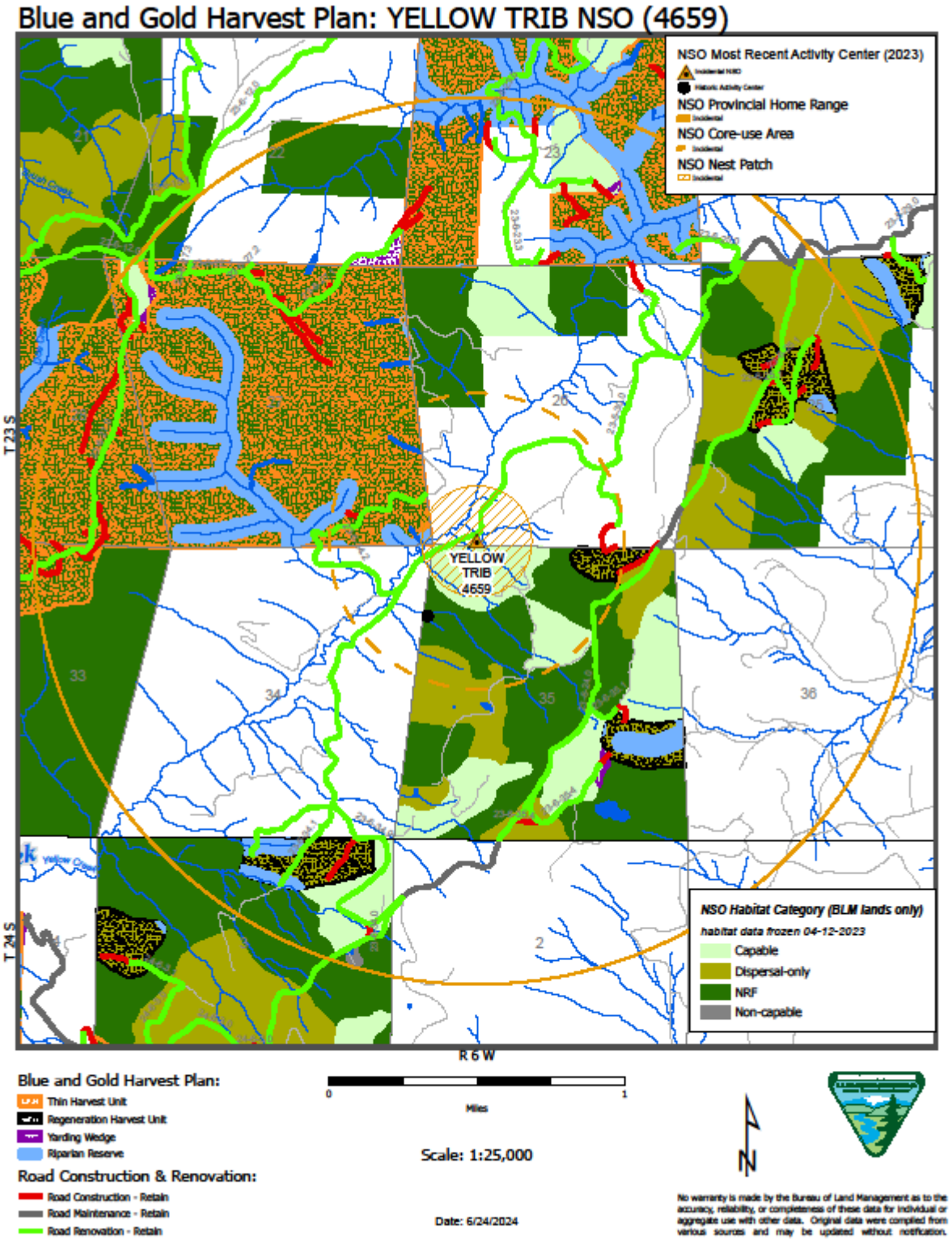

Blue and Gold Harvest Plan: UPPER YELLOW CREEK NSO (1924)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
T23S
T24S
R6W
Yellow Creek
UPPER YELLOW CREEK 1924
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: YELLOW BUTTE NSO (1992)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
YELLOW BUTTE 1992
T 23 S
T 24 S
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: YELLOW CREEK NSO (0391)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
YELLOW CREEK
0391
T 23 S
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
N
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: YELLOW MARTIN NSO (4055)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
YELLOW MARTIN 4055
T 23 S
T 24 S
R 7 W
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
Date: 6/25/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.


Blue and Gold Harvest Plan: YELLOW TRIB NSO (4659)
NSO Most Recent Activity Center (2023)
NSO Provincial Home Range
NSO Core-use Area
NSO Nest Patch
YELLOW TRIB 4659
T 23 S
T 24 S
R 6 W
NSO Habitat Category (BLM lands only)
habitat data frozen 04-12-2023
Capable
Dispersal-only
NRF
Non-capable
Blue and Gold Harvest Plan:
Thin Harvest Unit
Regeneration Harvest Unit
Yarding Wedge
Riparian Reserve
Road Construction & Renovation:
Road Construction - Retain
Road Maintenance - Retain
Road Renovation - Retain
0
1
Miles
Scale: 1:25,000
N
Date: 6/24/2024
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Tuesday, August 20

Foster, Christopher C 2:33 PM
Are you available about 430 to talk

Price, Amy L 3:06 PM
I have a [redacted] until 4:30, but available by 5 if not before.

Foster, Christopher C 3:23 PM
If you would, please call me on TEAMs, when you become available after 5. Nothing critical, should be short call.

Price, Amy L 4:41 PM
Does now work?

Foster, Christopher C 4:43 PM
call away

Price, Amy L 5:36 PM
As a follow up to your question, I have a question. Will spot check surveys be implemented for the NSO sites with occupied, incidental & unknown status?

Foster, Christopher C 5:46 PM
let me check with Jason, short answer is we will follow protocol.

Monday, August 26

Price, Amy L 3:38 PM

BA pg 76, Table 25 shows single female detection in 2022 and the text above in 5.1.3.2.4 also says single detection (female) 2022, but the text above the map of the incidental detection location says **male**. See below. *Could you please clarify this before 9:30 tomorrow? I have a meeting with Jim that I want to be sure that I have accurate information to rel

Hi Chris. I hit return by mistake, but wanted to find out about the sex of this detection before tomorrow morning's meeting if possible. The other clarification requests will come in an email shortly.

Foster, Christopher C 4:00 PM

The text on map is in error Table 22 and text in 5.1.3.2.4 are correct... single unk sex/spp in 2021, single female female NSO in 2022

Price, Amy L 4:01 PM

Thank you very much for the quick reply Chris! Much appreciated.

Outlook

Re: B&G BA figure 14

From Foster, Christopher C <cfoster@blm.gov>
Date Mon 8/26/2024 9:57 AM
To Price, Amy L <amy price@fws.gov>

1 attachment (1,011 KB)
ARU Incidental.jpg;

new figure 14.

Christopher C. Foster
Sup. Nat. Res. Spec.
South River Field Office
Roseburg BLM

cfoster@blm.gov

office: 541-464-3359
cell: (b) (6) Personal Privacy

From: Price, Amy L <amy_price@fws.gov>
Sent: Saturday, August 24, 2024 3:59 PM
To: Foster, Christopher C <cfoster@blm.gov>
Subject: B&G BA figure 14

Hi Chris-

Page 72 states "...because MSNO 3267 was believed to be occupied in 2021 the detection was attributed to that site."

Could we please get a figure that updates Figure 14 from page 73 of the BA that includes the home range/CU/NP for MSNO 3267 to inform what is being described in the above text?

Thanks!

Amy L. Price (she/her: why is this important?)

Fish and Wildlife Biologist
Ecological Services-Forest Resources
U.S. Fish and Wildlife Service
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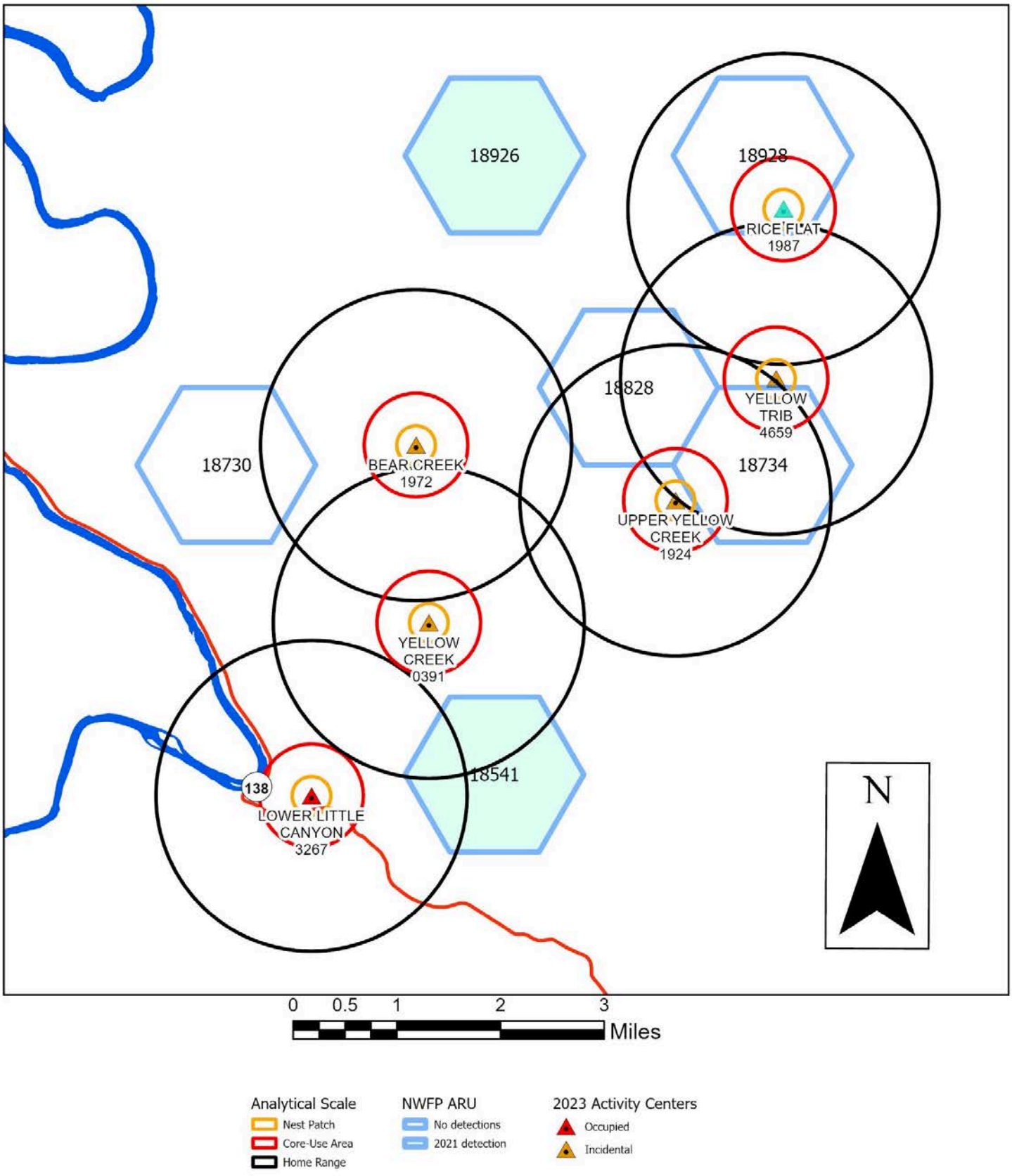
"Let the beauty of what you love be what you do." - Rumi


18926
18928
RICE FLAT
1987
18828
YELLOW
TRIB
4659
18730
BEAR CREEK
1972
18734
UPPER YELLOW
CREEK
1924
YELLOW
CREEK
0391
18541
138
LOWER LITTLE
CANYON
3267
N
0 0.5 1 2 3
Miles
Analytical Scale
Nest Patch
Core-Use Area
Home Range
NWFP ARU
No detections
2021 detection
2023 Activity Centers
Occupied
Incidental

Outlook

Re: MSNO 1804 &1992

From Foster, Christopher C <cfoster@blm.gov>
Date Wed 9/11/2024 10:48 AM
To Price, Amy L <amy price@fws.gov>
Cc Foster, Christopher C <cfoster@blm.gov>

Unknown status is due to lack of, or incomplete surveys.

Christopher C. Foster
Sup. Nat. Res. Spec.
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Roseburg BLM

cfoster@blm.gov

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From: Price, Amy L <amy_price@fws.gov>
Sent: Wednesday, September 11, 2024 10:26 AM
To: Foster, Christopher C <cfoster@blm.gov>
Subject: MSNO 1804 &1992

Good morning, Chris-

Quick fact check for Doe Creek & Yellow Butte. Their status as unknown in 2022-2023 is that due to lapse in surveys or for another reason(s)?

Amy L. Price (she/her: why is this important?)

Fish and Wildlife Biologist
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"Let the beauty of what you love be what you do." - Rumi

Outlook

Re: Blue & Gold

From Reeder, Erich M <ereeder@blm.gov>
Date Wed 2/13/2019 10:55
To Gayner, Elizabeth I <egayner@blm.gov>

And it would make sense that when allocating HLB, and then creating timber sale plans, we'd want to focus on Dispersal and stay away from NRF/RA32, but since that layer is equally unreliable because it is also based on an unreliable FOI...my oh my, what a mess!

On Wed, Feb 13, 2019 at 9:49 AM Gayner, Elizabeth <egayner@blm.gov> wrote:

> Back in the day, its starting base is the FOI layer using stand age as the general determination for habitat type (0-39 capable, 40-79 dispersal-only, 80+ NRF). Unfortunately, many of these stands are not aged correctly because they are based on the younger cohort if they were logged at all. Remnant trees were not considered for the stand age. As we visit stands... we verify one way or another and I make the changes to the layer with the dates field verified and comments to provide justification and documentation.
>
> Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

On Wed, Feb 13, 2019 at 9:41 AM Reeder, Erich <ereeder@blm.gov> wrote:

> I just checked 23-6-29B and 24-6-5E, and again NRF and RA32 in classified Dispersal only. I'll get you some maps. How was the NSO Habitat layer made anyhow?
>
> On Wed, Feb 13, 2019 at 7:57 AM Gayner, Elizabeth <egayner@blm.gov> wrote:
>
> > Thanks for the update! Please get me a map with your hab delineations and determinations and I will change in the District Habitat layer. No doubt there are many stands misclassified... so, we will keep plugging away at updating our hab layer.
> >
> > Thanks Erich!
> >
> > Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
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Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

On Tue, Feb 12, 2019 at 6:29 PM Reeder, Erich <ereeder@blm.gov> wrote:

> Hi Liz, Angie & Cindy,
>
> Well after being out at 24-6-7C another day here's the scoop—the stand is an old burn that was then selectively logged 60 years ago, leaving many large OG remnants, including a whole bunch of broken-top live trees beautiful for NSO nesting. I checked the Rsbg District Habitat (Feb 2018) layer and the whole stand is down as Dispersal only. This is wildly wrong, all that I've seen so far is Nesting, Roosting, Foraging with some areas of high-quality RA32.
>
> I looked at 23-6-20A too, and the proposed sale area is classified as Dispersal only, and its got RA32 along the E side and some NRF there as well.
>
> I haven't looked at other stands, but I suspect these two are not the only ones we'll find that are mistyped as to NSO Habitat and this is a problem.
>
> Cheers!
> E

Outlook

Fw: 2021 PNW ARU Prelim Results and 2022 Blue & Gold NSO Surveys

From Wise, Heather R <hwise@blm.gov>
Date Wed 8/10/2022 11:42
To Vaca, Veronica M <vvaca@blm.gov>; Whitt, Jordan C <jcwhitt@blm.gov>; Bright, Cindy K <ckbright@blm.gov>
Cc Gayner, Elizabeth I <egayner@blm.gov>

1 attachments (625 KB)
NSO_B&G_ARU_2021Results&2022Direction.pdf;

Here are the maps for the B&G sites with 2021 ARU detections. Focus survey efforts to cover all NRF and large areas of dispersal habitat within the hexagon. Code visits as "AD" and "N". Document on STOC visit cards the reason for the additional visit and that it is Blue and Gold EA. We went over them on 8/09 and it looks like just 3 hexagons, no need to survey in Doe Creek again, it has 6 visits. I have the sites, TRS and hexes outlined in the SW Wildlife Tasks sheet that will follow in a separate e-mail.

Thanks,

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, March 15, 2022 10:48 AM
To: Keller, Marnie N <mkeller@blm.gov>; Wise, Heather R <hwise@blm.gov>; Reeder, Erich M <ereeder@blm.gov>; Bright, Cindy K <ckbright@blm.gov>; Whitt, Jordan C <jcwhitt@blm.gov>; Vaca, Veronica M <vvaca@blm.gov>; Bullard, Billy L <bbullard@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>
Subject: 2021 PNW ARU Prelim Results and 2022 Blue & Gold NSO Surveys

Hey Gang,

Attached are the preliminary results from the PNW ARU surveys in Blue and Gold and my direction on tackling survey effort in the hexagons that had detections. There are four sites that will take some extra effort for set-up and surveys. I know that survey areas have been assigned, but I want everybody to be in the loop because surveys in this area are our highest priority and will most likely involve everyone on the crew at some point.

We received the ARU detection information from PNW late last week. We are still trying to get more detailed information. But given how long it took to get this much from PNW, we are going to use what we have thus far instead of waiting further. If we get additional information in the near future (e.g., which specific ARUs recorded NSO), I will let you all know. In the meantime we will proceed with the direction I have outlined in the attached document. This morning, DLT was briefed on the information we received from PNW and on how we are going to approach the 2022 survey effort using the 2021 ARU information.

Please direct any questions or concerns to Heather, and she and I will work through them. We can also discuss as group before or after NSO training this next Monday if needed.

Thank you,

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

Outlook

Re: ARUs & Doe Crk

From Gayner, Elizabeth I <egayner@blm.gov>
Date Mon 6/14/2021 18:06
To Reeder, Erich M <ereeder@blm.gov>
Cc Keller, Marnie N <mkeller@blm.gov>; Bright, Cindy K <ckbright@blm.gov>; Wise, Heather R <hwise@blm.gov>

Erich, Waiting on the ARU shipment to come in. To meet protocol, we need four ARUs to cover a hexagon. So, as soon as the order gets here... they can be deployed into Doe Creek.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

From: Reeder, Erich M <ereeder@blm.gov>
Sent: Monday, June 14, 2021 15:19
To: Gayner, Elizabeth I <egayner@blm.gov>
Cc: Keller, Marnie N <mkeller@blm.gov>; Bright, Cindy K <ckbright@blm.gov>; Wise, Heather R <hwise@blm.gov>
Subject: ARUs & Doe Crk

Hi Liz,
I know we discussed leaving the ARUs out at the Archie fire, but it occurred to me that there is at least one site in the proposed Blue & Gold TS area where there have been concerns voiced that our night surveys do not cover the NSO habitat completely. This is Doe Creek (23-6-28,29). I'm not sure if there are other sites in the B&G footprint that have similar issues (Yellow Butte and Upper Yellow Crk...?), but at least this one seems to call for ARU placement sooner than later to give us a better chance of detecting NSO occupancy.
Thanks,
E

Outlook

Re: Protocols for NSO Surveys in Blue and Gold Bonus Sections

From Korn, Michael J <mkorn@blm.gov>
Date Tue 2/1/2022 09:12
To Wise, Heather R <hwise@blm.gov>
Cc Showalter, Rachel M <rshowalt@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>

Thanks Heather, to confess - I was at the last level 1 meeting but kept getting interrupted so apparently missed the discussion (that's what I don't like about telework). Anyway given the extra workload and exposure I wanted to make sure we weren't just assuming without verifying the necessity for the additional visits.

Mike Korn
Swiftwater Field Manager
Bureau of Land Management
777 NW Garden Valley Blvd
Roseburg, Oregon
541-464-3211

From: Wise, Heather R <hwise@blm.gov>
Sent: Tuesday, February 1, 2022 8:45 AM
To: Korn, Michael J <mkorn@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Protocols for NSO Surveys in Blue and Gold Bonus Sections

Hi Mike,

After our discussion yesterday, I asked Liz Gayner about the NSO surveys for the 3 sites in the Blue and Gold EA "Bonus Sections" (Upper Yellow, Yellow Butte, and Doe Creek) that did not meet protocol in 2021 because the survey area was not covered completely. Our plan is to access the NSO NRF habitat that needs additional call points for full coverage and survey those sites using the 2012 USFWS Protocol which requires a minimum of 6 night visits with no response for non-occupancy.

Your question was to inquire about whether we could reduce survey efforts by implementing the 1998 Forsman, Spotted Owl Monitoring Protocol for Demographic Studies which requires a minimum of 3 night visits with no response for non-occupancy. We are under agreement with the USFWS to use the 1998 Forsman 3-visit protocol for the Tyee Survey Area as a continuation of monitoring sites that were surveyed during the implementation of the Tyee Density demographic study (1990- 2020).

Liz informed me that this specific topic was brought up and discussed at the last USFWS Level 1 meeting in January with Jim Thrailkill. Jim confirmed that we need to survey Upper Yellow, Yellow Butte, and Doe Creek using the 6 visit 2012 USFWS Protocol because there was a break in continuity (since 2016) of survey effort in this area. This decision was based on knowledge of the PNW crew's survey effort when

the Tyee Density Study was still in place and last year (2021) when the Swiftwater Wildlife crew continued monitoring those sites.

In addition, Upper Yellow, Yellow Butte, and Doe Creek are almost entire sections of high quality NSO NRF and RA-32 habitat which will certainly get the attention of those scrutinizing this EA project, therefore it is in our best interest to complete the full 2012 USFWS survey effort (6-visits).

The Swiftwater Wildlife crew is prioritizing survey efforts in the Blue and Gold EA NSO survey area as well as other project areas, and we can ensure that project clearance will be prioritized if there are any "issues" during the 2022 NSO survey season. Roli Espinosa, the Wildlife lead on the Blue and Gold EA, will be updated on a regular basis throughout the survey season so that he can address anything that arises in a timely manner with the IDT.

Let one of the Wildlife staff (Rex, Liz, Roli, or me) know if you have further questions.

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

Outlook

Re: Status

From Gayner, Elizabeth I <egayner@blm.gov>
Date Wed 2/2/2022 23:10
To Espinosa, Rolando H <respinos@blm.gov>

Habitat layer for DMF area is not updated yet. Sent Jeremy an email asking for the information and then I will get the GIS layer updated.

I hear ya re MAMU in B&G. The current protocol mentions something about talking with the "powers that be" (i.e., FWS) if detections are obtained during the second year of surveys to determine if there is a need for additional years of survey effort (I don't remember exact language, so totally paraphrasing). So just curious if there was discussion with Level 1. I have been so out of the MAMU loop over the last couple of years. So when looking through the data, I was surprised on how many presence detections we had in the B&G area. So, I agree with your biology brain re MAMU likely occupying the area. The jet sounds are a very good indicator of occupancy in one of the Yellow Creek sites. So, yes frustrating at so many levels. Hopefully surveys in the bonus units will have positive results.

I still plan to use ARUs in the bonus units to supplement our NSO and MAMU surveys. I am also in the process of talking with Rex about acquiring additional ARUs (currently we have enough to cover 3 hexagons). I have told Erich to plan for deployment in early March... as soon as the NSO survey season starts and then have a plan to survey the bonus units throughout the season- especially in those difficult to reach places by foot.

We are also waiting on PNW to process our ARU data from last year at Doe Creek, as well as waiting on their ARU data from the same area. Like MAMU, I would think NSO are hiding down in those bonus units as well. And apparently PNW got MAMU detections on their ARUs- but we don't know where yet (Rex requested the data). I have also been taking a bunch of trainings through Wildlife Acoustics on running their software and just got two separate computers to dedicate to processing ARU data. I am also looking into BirdNet through Cornell to analyze data. So my plan is to process ARU data much more timelier after retrieving data cards so we can use any positive data to help with our on the ground survey effort.

So will keep you posted on our progress! My fingers are crossed for some positive results one way or another. 🙂

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

From: Espinosa, Rolando H <respinos@blm.gov>
Sent: Wednesday, February 2, 2022 22:17
To: Gayner, Elizabeth I <egayner@blm.gov>
Subject: Re: Status

Thanks for the info Liz. The reason I was asking is that originally that project was included in the Cumulative Analysis for Blue and Gold. I am wondering if we still have to include it as a cumulative action. Is the NSO habitat layer updated with that habitat loss yet?

Regarding the murrelets.
2019-Presence (Yellow Creek 4 I C) 6/11/2019
2020-Presence (Yellow Creek 05 III) 5/14/2020
2020-Presence (Yellow Creek 07 IV) 7/10/2020

No Detections in 2021
I was about to send you this but I see you just corrected the date.

No additional surveys are planned in 2022 in the Yellow Creek sites with prior presence. As you know rumor and future protocol standards are not good enough to do more surveys given the desire of managers to sell Blue and Gold units 4th quarter of 2022 or earlier.

My biology brain says that murrelets are probably nesting in the entire Blue and Gold project area, especially the Bonus units. Very frustrating.

Have a good night

Roli Espinosa
Roseburg District BLM
South River Lead Wildlife Biologist
777 NW Garden Valley Blvd.
Roseburg, OR 97471
541-464-3351 respinos@blm.gov

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, February 2, 2022 19:36

To: Espinosa, Rolando H <respinos@blm.gov>
Subject: Re: Status

Most, if not all, should be cut and completed. I need to ask Jeremy that very question. Just sent him an email.

On another note, I was going through the MAMU detection data to clean up and update my records for occupied and presence sites so I can assign numbers to new occupied sites. I noticed that the Yellow Creek Sites all got detections- jet sounds at one site in 2020 and presence in 2021 at each of the other two sites. Are another year of surveys planned for 2022, particularly at those sites that got detections last year?? Rumor has it that at least one of the two last years were not good for MAMU (low nesting/low food resources) in Oregon.

FYI- Under the new survey protocol currently under review/revision, it will declare jet sound detections as occupied.

Hope you are hanging in there otherwise. ☺

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

From: Espinosa, Rolando H <respinos@blm.gov>
Sent: Wednesday, February 2, 2022 17:34
To: Gayner, Elizabeth I <egayner@blm.gov>
Subject: Status

Hi Liz,

Do you know the status of the Deadman's Folly Harvest Plan, DFHP? Has it been sold and has it been cut?

RE

Roli Espinosa
Roseburg District BLM
South River Lead Wildlife Biologist
777 NW Garden Valley Blvd.
Roseburg, OR 97471
541-464-3351 respinos@blm.gov

Outlook

Re: Proposal of sites to drop

From Gayner, Elizabeth I <egayner@blm.gov>
Date Thu 5/12/2022 16:07
To Wise, Heather R <hwise@blm.gov>
Cc McGraw, Rex L <rmcgraw@blm.gov>

- I would like to keep Upper North Fork, Smith Folley, Peterson Point, SF Smith River, Lower South Fork (large chunk of contiguous NRF with some occupancy).
  I agree with monitoring Smith Folley, (it is completed to protocol for 2022, pair occupancy, not nesting), however in most of the other sites you mentioned, there are large areas of NRF that we really are not covering, and can't without putting in off road trails, like the B&G bonus sections. I can re-evaluate the coverage once I complete the call-point edits from our first round of visits. The pair that was in Upper North Fork 2021 is no longer there, the male is alone and hopping around between Lookout Mtn (30 March) and Upper Tom Folley (2 & 10 May), we have gotten not nesting by mousing with him 3X since the end of March (dates above), with no female. The sites you mentioned above are all accessed via Smith River road, which is different and longer route than the other sites we kept, that is why I grouped them together. If anything, I would continue surveying Lookout Mtn, although isolated access, to see if we can get resident single occupancy, but I doubt we will since that male has moved on.

  I think this is worth discussing more. Rex and I were looking at this together last night so his input was part of initial evaluation and weighed in on my original response last night. He was looking at it from a Level 1 perspective too. We are also considering how this plays into Appendix A for future projects in the area given there is talk about doing LSR treatments. As you know, technically we do not consider the banding information on a single male occupying more than one site - so that shouldn't really be part of the consideration. Our consideration to keep in was because this area has been occupied fairly consistently up through the last two years. If we can still get single adult residency at one or more sites... still valuable. It may be worth dropping additional outlier sites to keep these in (refer to next dialogue).

  The bottom line is that we need to drop enough sites to lessen the work load so we can feasibly survey to protocol what we have on our plate. I wish we weren't in this predicament, but we just lost 2 surveyors and I don't want to burn out the rest of us. I would love to keep all the sites but I don't believe we can get it all done with the staff we have. It is not safe or fair to over work everyone. Currently we only have (3) Veronica, Jordan, and Cindy full-time on owl surveyors, I'm working full-time on owls but shouldn't be, and Jon is picking up about half a surveyor work load for the 2nd round of visits.

  I am well aware of the staffing situation and that is what we are trying to work through here. But in addition to reducing workload and with talking through this with Rex, we do

need to consider doing so from other perspectives and needs so, we are considering the Level 1 perspective, a District and RA perspective, what is best for owl management under RMP, etc.,. We would rather drop sites that have been unoccupied for years versus sites that have been recently occupied. So if we can drop enough sites to make up for the fact that extra work may need to do more at the other sites, then we should consider that. We would rather shave off the outer edges of the TSA than taking more out of the middle...especially if recently occupied. In addition to Smith River sites, I think other sites to consider dropping because they are on the edges of TSA and have not been occupied in recent years are...

Drain WS
Bear Hill
Brad's Trib
Coon Creek
Eagle's Beach
Lost Creek
Marvin Gardens
Maupin Road
Mehl Creek
Mill Trib
Ravendale
South McGee
Upper Cougar Creek

- *By the way, Lower South Fork has no triangle or information in the 2001 NSO layer. What is occupancy status for the last 5-10 years?*

Take a look at what I am proposing and let's discuss further. We also will need to run this by the Level 1. So, I think we need to do so with Rex too... just so we have part of Level 1 input looped in ahead of time.

Thanks!

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management Roseburg District Office
Phone: (541) 464 3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Thursday, May 12, 2022 13:33
To: Gayner, Elizabeth I <egayner@blm.gov>
Subject: Re: Proposal of sites to drop

Liz,

In general, I like the proposal.

- I would like to keep Upper North Fork, Smith Folley, Peterson Point, SF Smith River, Lower South Fork (large chunk of contiguous NRF with some occupancy).
  I agree with monitoring Smith Folley, (it is completed to protocol for 2022, pair occupancy, not nesting), however in most of the other sites you mentioned, there are large areas of NRF that we really are not covering, and can't without putting in off road trails, like the B&G bonus sections. I can re-evaluate the coverage once I complete the call-point edits from our first round of visits. The pair that was in Upper North Fork 2021 is no longer there, the male is alone and hopping around between Lookout Mtn (30 March) and Upper Tom Folley (2 & 10 May), we have gotten not nesting by mousing with him 3X since the end of March (dates above), with no female. The sites you mentioned above are all accessed via Smith River road, which is different and longer route than the other sites we kept, that is why I grouped them together. If anything, I would continue surveying Lookout Mtn, although isolated access, to see if we can get resident single occupancy, but I doubt we will since that male has moved on.

  The bottom line is that we need to drop enough sites to lessen the work load so we can feasibly survey to protocol what we have on our plate. I wish we weren't in this predicament, but we just lost 2 surveyors and I don't want to burn out the rest of us. I would love to keep all the sites but I don't believe we can get it all done with the staff we have. It is not safe or fair to over work everyone. Currently we only have (3) Veronica, Jordan, and Cindy full-time on owl surveyors, I'm working full-time on owls but shouldn't be, and Jon is picking up about half a surveyor work load for the 2nd round of visits.

- Instead drop Ravendale, Drain Watershed, EF Flagler Creek? Drop sites along valley edges...
  I was considering dropping Ravendale and Drain Watershed, but I think that EF Flagler is on the edge of the B&G analysis area, so despite its scattered habitat, we need to call the 3 points to protocol for B&G. I can add Ravendale *and Drain Watershed to the proposal but they are not equivalent in effort to Upper North Fork, Smith Folley, Peterson Point, SF Smith River, & Lower South Fork.*

- Rationale for dropping Andrews Creek (pretty close to incidental site...)
  Andrews Creek was 'dropped' bc it was 'not to protocol' in 2021 due to the "wind" issue. It is still being surveyed as part of Snail Canyon, but not under the name of Andrews Creek, which is a TSNO site. I guess that is a little confusing.

  The other random sites below Hwy 138 are similar issues from 2021, I just added them into the pot to create the full picture. There are notes / rational for why we are not surveying those sites. Some are being surveyed by Coos Bay, some are on Coos Bay BLM, and some were not to protocol in 2021 but being called with an MSNO.

- The scattered sites below Hwy 138 would need rational (some sites are more interior). *See Above*

I am free to chat today, aside from the Hazmat training which I will join on TEAMS so I can multi-task, I will be completing NSO call-point edits.

I asked yesterday, but no word from Rachel on Emergency hires.

Thanks for checking out the proposal,

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, May 11, 2022 4:48 PM
To: Wise, Heather R <hwise@blm.gov>
Subject: Re: Proposal of sites to drop

I finally got into GIS (been temperamental and sorry for the delay... have been dealing with personal stuff and work stuff) to look at your proposal.

In general, I like the proposal.

- I would like to keep Upper North Fork, Smith Folley, Peterson Point, SF Smith River, Lower South Fork (large chunk of contiguous NRF with some occupancy).
- Instead drop Ravendale, Drain Watershed, EF Flagler Creek? Drop sites along valley edges...
- Rationale for dropping Andrews Creek (pretty close to incidental site...)
- The scattered sites below Hwy 138 would need rational (some sites are more interior).

I have more questions... but these are the main ones. I have a meeting I need to run to. But can discuss further tomorrow if you are available.

Thanks for the work on this.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management Roseburg District Office
Phone: (541) 464 3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Monday, May 9, 2022 17:03
To: Gayner, Elizabeth I <egayner@blm.gov>
Subject: Proposal of sites to drop

Liz,

I looked through the list of sites and on ArcMap. I made a feature class of the proposed Smith river sites to drop and added the sites that we have already dropped, absorbed into MSNO sites, or Coos Bay is surveying this year. There are comments on the sites that we are already not surveying in the notes field.

My proposal drops an additional 35 sites from TSA, which is only a little bit more than 1 surveyor effort (~27 sites). I broke it off at the ridge top, Halfway Ridge area.

The feature class is at:
(b) (5) Government Commercial Information

I am waiting on a reply from Devon Johnson at RRC to make sure I have a complete list of the sites that we agreed were covered for them. He never actually sent a list, I only told him what we dropped that was out of protocol in 2021.

Otherwise it is up to you, Rex, and Korn.

Let me know what you think,

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

Outlook

NSO Survey Effort for 6-visit B&G

From Wise, Heather R <hwise@blm.gov>
Date Thu 7/14/2022 14:48
To McGraw, Rex L <rmcgraw@blm.gov>
Cc Gayner, Elizabeth I <egayner@blm.gov>

Hi Rex,

I was delightfully wrong when I told you we were on our 4th visit of 6 for the B&G Bonus sections (Upper Yellow, Yellow Butte/ Doe Cr). it is all a blur!

We completed the 5th Visit last night to all those sites. And....Have 5 visits completed at East Elk too!!

Next week we will do the 5th at Galagher Canyon TS sites.

I plan on doing a later in the night/ pre-dawn survey at the B&G sites for the 6th visit.

But so far, we have had only one detection of a female contact call in Upper Yellow Creek in March by Reeder. Follow-ups and future visits in the area, only detected barred owls, so it is possible that the contact calls were from a barred owl female. Hopefully ARUs will help identify what species is in the area.

Nearby at Yellow Trib, Cindy heard a male spotted owl in February while road clearing. There have been no other spotted owl detections at Yellow Trib or adjacent sites either.

It's saddening that there are no spotted owls making all that contiguous NRF their home.

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

Outlook

Re: Possible survey's adjacent to YEB-4 ARU location

From Gayner, Elizabeth I <egayner@blm.gov>
Date Tue 11/7/2023 18:37
To Kufta-Christie, Lindsey A <lkuftachristie@blm.gov>; Wind, Marcus <mwind@blm.gov>
Cc Reeder, Erich M <ereeder@blm.gov>

I need to know more information so I can review this in GIS. What station(s) were being surveyed within the time frame of the detection? The call points with a 0.25-mile radius buffer-taking topography out of the equation- do not cover all of the habitat in Section 23. So, we need to scrutinize/review this carefully. I am leaning towards recorder in part because the male and female hoots are at the same volume (so to speak). I also have not listened with earphones yet... just turned up on my laptop. We can also discuss further at Monday's afternoon's meeting.

Thanks,

Liz

From: Kufta-Christie, Lindsey A <lkuftachristie@blm.gov>
Sent: Friday, October 20, 2023 14:06
To: Wind, Marcus <mwind@blm.gov>
Cc: Reeder, Erich M <ereeder@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>
Subject: Possible survey's adjacent to YEB-4 ARU location

Hi Marcus,

I see you surveyed Snail Canyon on 5/22. Is it possible you could hear your broadcast at Yellow Butte? The location of the ARU is:

469939	4821923

There were three distant four-note calls heard around 2239—the first note may be nonexistent. The other recording sounds like a series call into a three-note. Let me know if you think it is possible given topography and the coverage of your broadcast over the landscape. Attached are the clips, if you listen to the recording you will need to turn the volume up to 100%.

Enjoy the weekend,
Lindsey

Date: February 12, 2024

Prepared by: Elizabeth Gayner (Wildlife Biologist)
Lindsey Kufta-Christie (Wildlife Bio Science Technician)
BLM, Roseburg District – Swiftwater Field Office

To: Roli Espinosa (Wildlife Biologist)
Chris Foster (Acting Field Manager)
BLM, Roseburg District – South River Field Office

Subject: 2022 and 2023 Northern Spotted Owl (NSO) Detection Summary using Autonomous Recording Units (ARUs) - Supplemental to 6-visit Call-back Survey Effort

Summary: ARUs were deployed in the Blue & Gold Harvest Plan project area to supplement the call-back survey effort. Because of the extremely steep terrain with deep canyons and lack of roads, it was determined call-back surveys inadequately surveyed all NRF habitat in inaccessible areas (e.g., limited ability for surveyor to hear NSO calling from within a deep canyons). Thus, ARUs were deployed to survey these difficult to reach areas and in areas where a NSO were heard but difficult to locate during additional day time searches and nighttime call-back surveys. ARUs were deployed for a six-week duration during the breeding season. Of the 20 ARUs deployed, NSO were detected on 7 and 6 deployment days in 2022 and 2023, respectively (Table 1).

Results: In 2022 20 ARU's were placed within the Blue & Gold Harvest Plan Project Area and were ran continuously for 13 hours a day generally from 1800 to 0600 the following morning, averaging 546 hours per ARU deployment. In 2023, 20 ARUs (in same locations deployed in 2022, dropped Yellow Trib ARU in 2023) and ran for 8 hours a day (1 hour before sunset through 3 hours after sunset and 2 hours before sunrise through 2 hours after sunrise) for at least six weeks averaging 336 hours per ARU deployment. The data was processed using PNW-Cnet v4.2.3 and Kaleidoscope Lite to visually analyze spectrograms and listen to 12-second audio clips (each audio clip produced has a prediction score output > 0.95 for each target class). Audio data was examined and validated to clear false positives and confirm positive detections. ARU detection validation to identify false positives were determined by comparing call-back surveyor times, locations (e.g., distance to callback survey station to ARU and topographical features obstructing sound travel), and the broadcast direction of the callbox at a survey station (stand(s) targeted for survey at that particular station).

Of the 20 ARU's deployed, 7 ARUs recorded detections of NSO vocalizations in 2022 and 4 ARUs recorded detections of NSO vocalizations in 2023 (Table 1).

Table 1. ARU detections of Northern Spotted Owls in 2022 and 2023.

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
2022								
Upper Yellow Creek sta. 1	465993, 4817591	3/16/2022 20:56 21:01	M	Yellow Butte 1992-01	3/16/2022 2052-2102	2.8	2 detections 3-note	
Upper Yellow Creek sta. 3	467333, 4817679	3/16/2022 21:01 21:33	M F	Yellow Butte 1992-01	3/16/2022 2052-2102	2.4	2+ detections 3-note, whistle, bark	**Occupied = Pair** There are additional detections for the same night.
Yellow Butte sta. 1	468366, 4820562	4/27/2022 20:50 21:41 23:28	M	Yellow Butte 1992-06 (466758, 4819991)	4/27/2022 1900-2000 Walk-in	0.84	1 detection multiple vocalizations	No overlap in detection times with call-back survey.
Yellow Butte sta. 2	468683, 4821004	7/12/2022 22:55	F	Marsh Trib 4682-04	2252-2302	1.5	1 detection 2 vocalizations (moderate)	**Figure 1.** Vocalization easily heard and likely in the stand. Call-back distance potentially too far and would expect call to be a fainter recording.
Yellow Butte sta. 4	469939, 4821925	7/1/2022 (6/30 survey) 00:10	F	Yellow Trib 4659-02 Blackberry Canyon 1916-07	0007-0017 0005-0015	1.3 1.29	1 detection 5 vocalizations includes very faint female 3-note and whistle	**Figure 2.** 4659-02 call point – broadcast of callbox should have been in opposite direction of ARU location. 1916-07 call point on opposite side of the ridge over a mile away
Yellow Creek sta. 1	4635715, 4818895	4/6/2022 23:09	M	None	None	NA	1 detection 4 vocalizations (very faint)	
Yellow Creek sta. 1	4635715, 4818895	7/6-7/2022 at 00:38	F	Upper Martin Creek 1972-04	0035-0045	0.7	1 detection 4 vocalizations	**Figure 3.** Ridge top to ridge top with potential ridges in between. Feasible that is it is a call-back survey given overlap in times,

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
								but no tone recorded; needs topographical analysis.
Yellow Creek sta. 1	4635715, 4818895	7/13/2022 21:30	M	Doe Creek 1804-03	7/13/22 2127-2137	1.09	1 detection 1 vocalization (moderately faint)	**Figure 4.** Ridge top to ridge top with potential ridges in between. Feasible that is it is a call-back survey given overlap in times, but no tone recorded; needs topographical analysis.
Yellow Creek sta. 2	464209, 4818224	4/5/2022 20:17	M	None	None	NA	1 detection 5 vocalizations (distant)	
2023								
Doe Creek sta. 7	467626, 4820705	6/14/23 at 20:56	M	None	None	NA	1 detection 9 vocalizations	
Upper Yellow Creek sta. 3	467333, 4817679	6/15/23 at 22:35 22:37 22:41 23:07	M	YEB 1992-13	6/15/23 2232-2243	1.4	1 detection 14 vocalizations (23:07 faint and 26 minutes after call-back survey completed)	**Figure 5.** Call-back on ridge top at ~1,940 feet to ARU at ~1,040 feet. Feasible first three detections are call-back survey given overlap in times, but no tone recorded. 23:07 detection was 26 minutes after call-back survey completed.
Yellow Butte sta. 4	469939, 4821925	5/10/23 at 03:55	M	None	None	NA	1 detection 1 vocalization	
Yellow Butte sta. 4	469939, 4821925	5/22/23 at 22:39	**Pr**	None	None	NA	1 detection 4 vocalizations (3-notes includes a BARK)	**Occupied = Pair**

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
Yellow Creek sta. 3	465221, 4818336	7/27/23 at 22:42	M	Bear Creek 1972-06	7/27/23 2246-2256	0.6	1 detection 4 vocalizations	**Figure 6.** Possible survey? Detection 4 min prior to start of call-back survey which should have been broadcasting to the west (towards Bear Creek site); ARU to the southeast, but elevation is similar and within direct line distance for potential audibility.
Yellow Creek sta.3	465221, 4818336	8/3/23 at 21:34	M	Snail Canyon 1980-13 Blackberry Canyon 1916-08	8/3/23 2133-2143 8/3/23 2134-2144	3.8 4.97	1 detection 1 vocalization	Distance to ARU to call-back stations are too far.

[1]ARU ID is not associated with NSO site name.
[2] F = Female, M = Male, Pr = Pair.
[3] Note: Juvenile Northern Goshawk detected 4/27.

Figure 1. Yellow Butte 1 (YEB 2) to Callback Survey Station 4682-04.

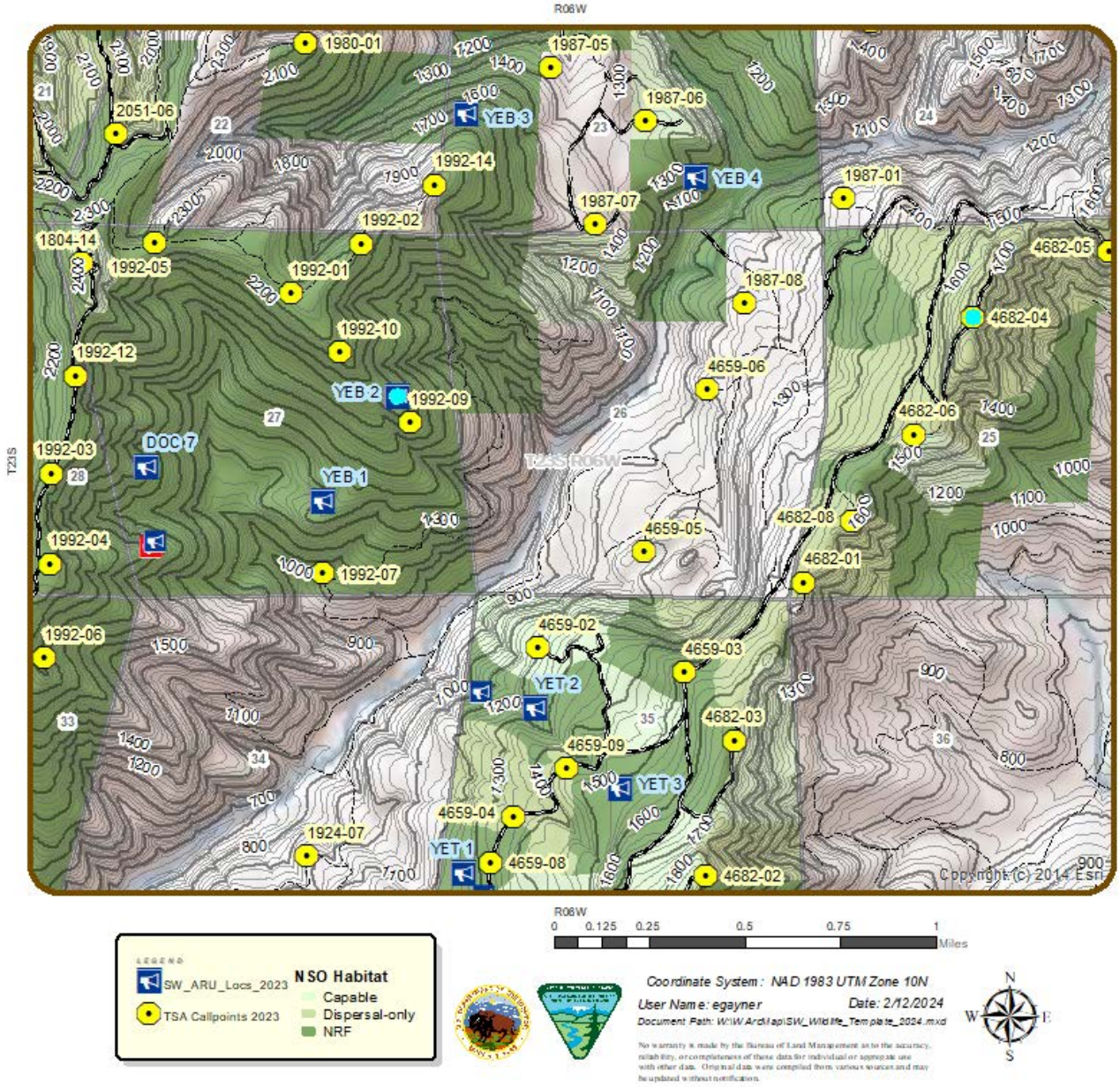


Figure 2. Yellow Butte 4 (YEB 4) to Callback Survey Stations 1916-07 and 4659-02.

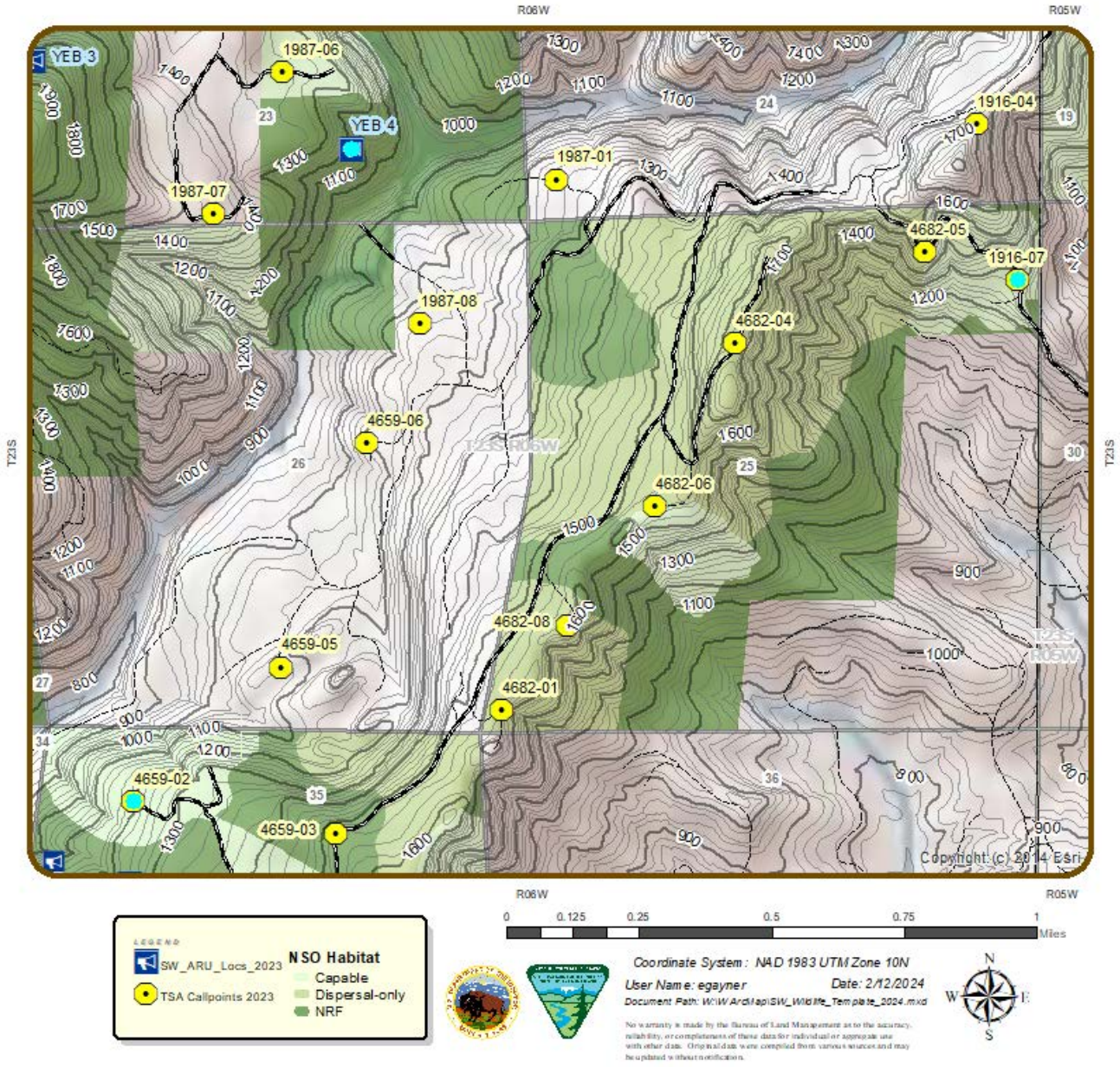


Figure 3. Yellow Creek 1 (YEC 1) to Callback Survey Station 1972-04.

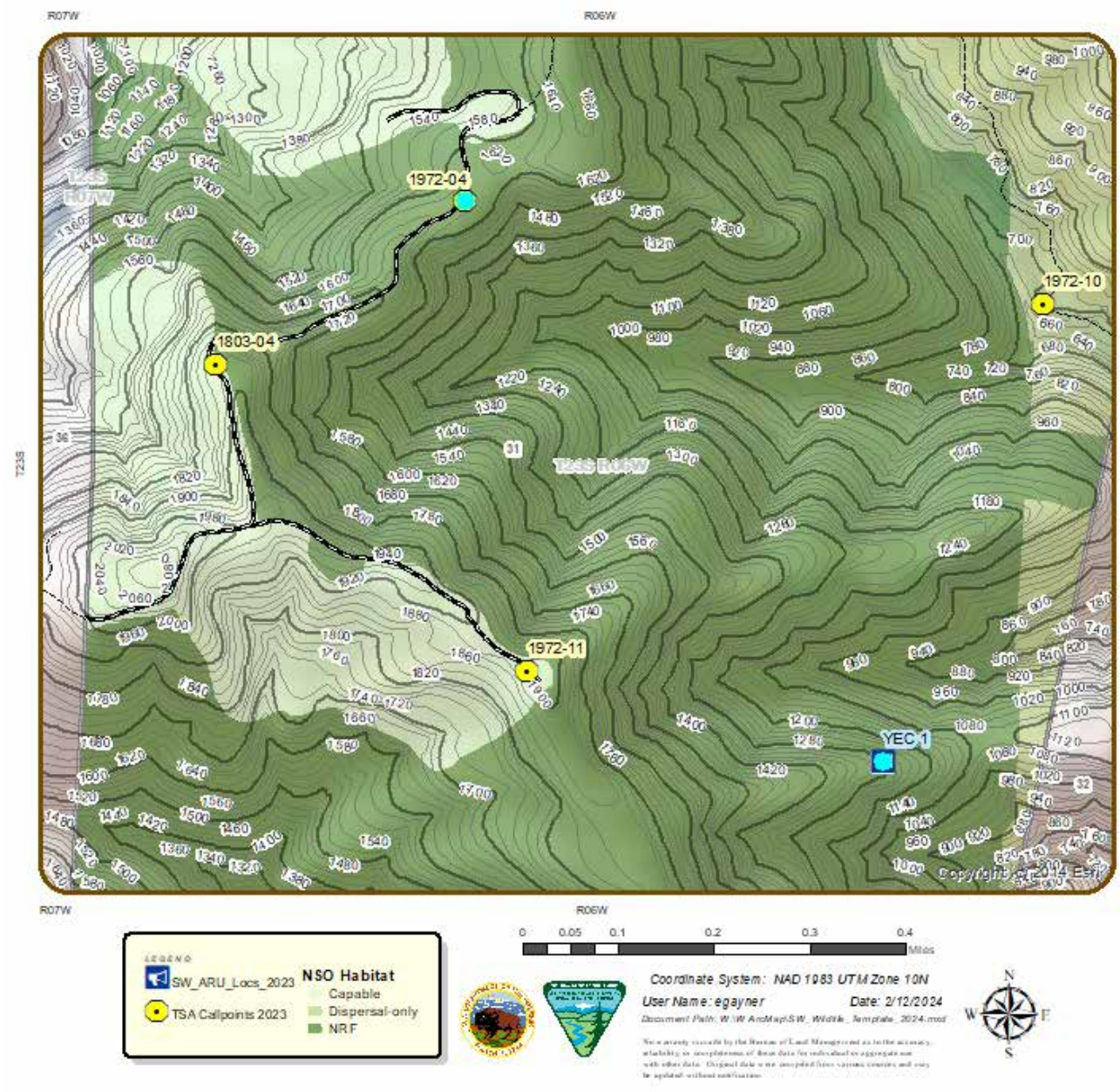


Figure 4. Yellow Creek 1 (YEC 1) to Callback Survey Station 1804-03.

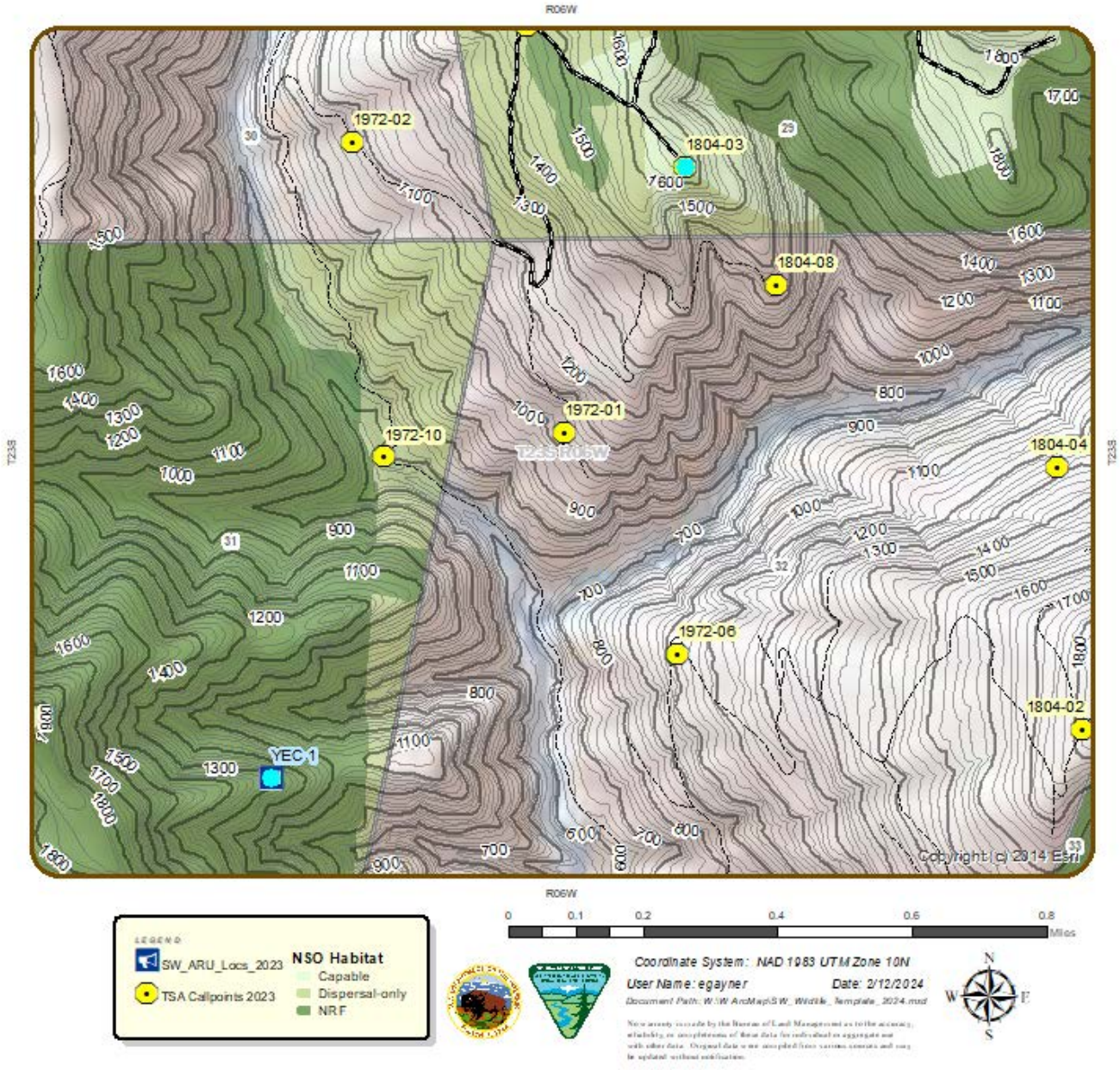


Figure 5. Upper Yellow Creek 3 (UYC 3) to Callback Survey Station 1992-13.

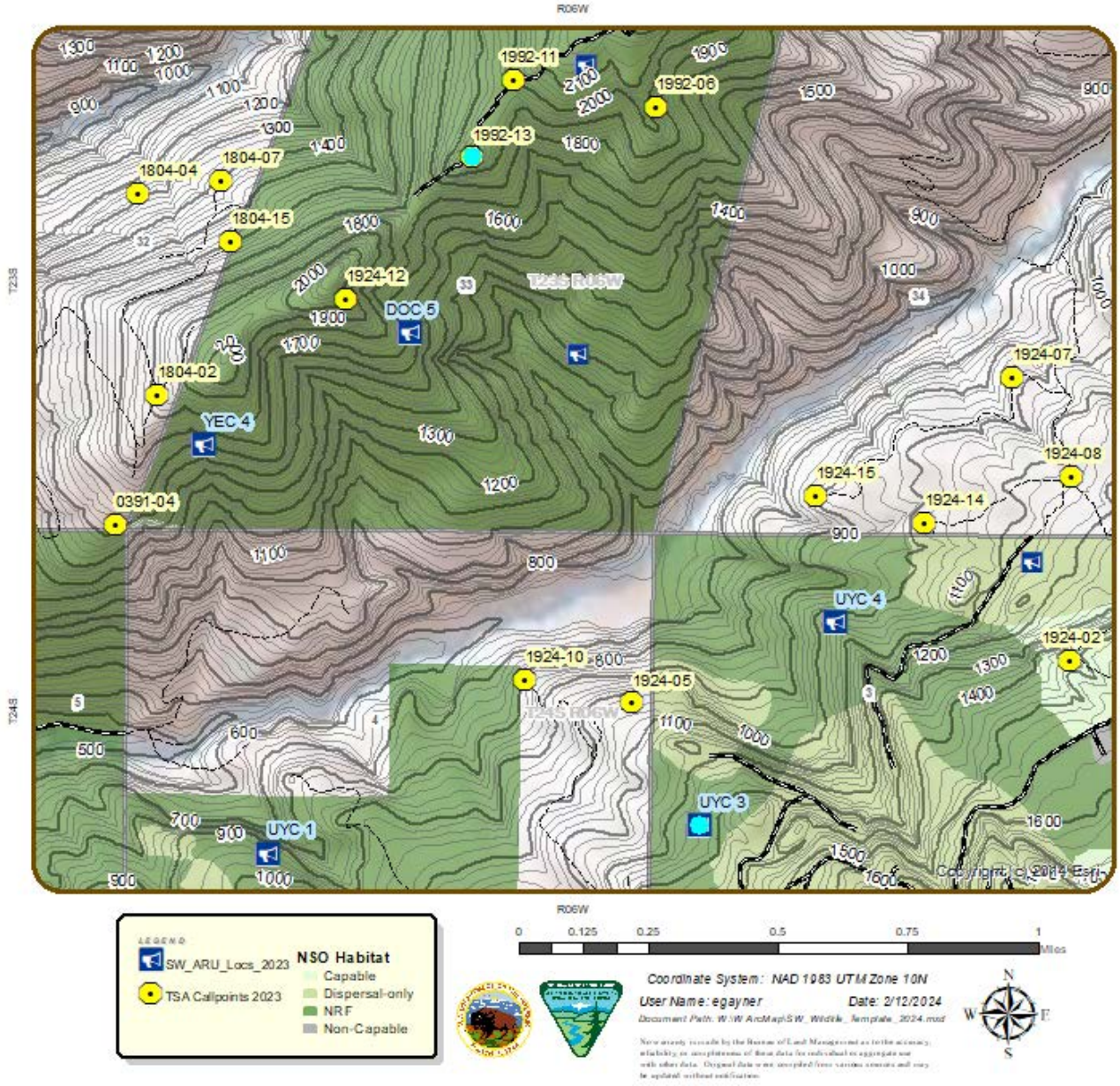
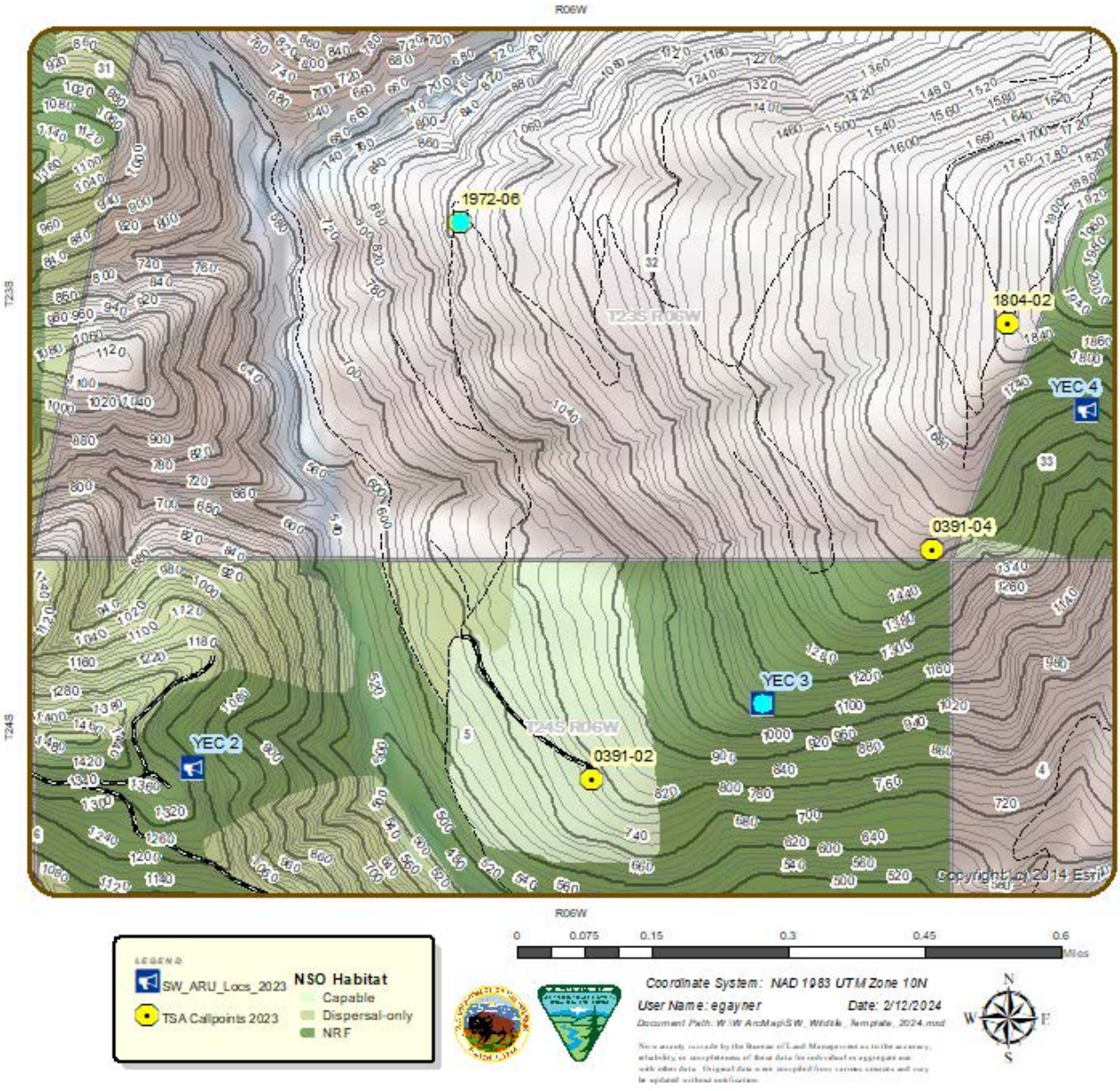


Figure 6. Yellow Creek 3 (YEC 3) to Callback Survey Station 1972-06.



Notes:

Most recent literature to consider when determining results and NSO occupancy status:

Appel, Cara L., Damon B. Lesmeister, Adam Duarte, Raymond J. Davis, Matthew J. Weldy, and Taal Levi. 2023. “Using Passive Acoustic Monitoring to Estimate Northern Spotted Owl Landscape Use and Pair Occupancy.” Ecosphere 14(2): e4421. https://doi.org/10.1002/ecs2.4421.

Based on Hane et al. (2022) who investigated detection distance and coverage area with automated detectors (ARU) for NSO:

- At distances less than 250 meters, the CNN correctly identified occupancy in more than 73 percent of trials.
- Areal coverage was a function of distance from source to microphone, location of the source relative to the microphone, and method of call analysis.
- Calls broadcast toward the microphones were more likely to be detected than calls broadcast away from the microphones.
- At 200 meters the estimated mean detection probability averaged over the five microphones for Kaleidoscope was 0.21 (95% CI: 0.17–0.26).
- For an estimated detection rate of at least 50 meters, distances ranged from 70–150 meters.
- a detection radius of 300 meters with the CNN method covers an area only one half as large as assumed in traditional surveys (400 meters/0.25 miles).
- The theoretical communication limit of a NSO call broadcast in a forest is between 300–600 meters (0.19 – 0.37 miles).

Hane, M. E., J. E. Thornton-Frost, A. Springford, and A. J. Kroll. 2022. Factors associated with automated detection of Northern Spotted Owl (*Strix occidentalis caurina*) four-note location calls. Avian Conservation and Ecology 17(1):26. https://doi.org/10.5751/ACE-02105-170126.

Outlook

B&G 2022-2023 ARU Data

From Gayner, Elizabeth I <egayner@blm.gov>
Date Mon 2/12/2024 16:30
To Espinosa, Rolando H <respinos@blm.gov>; Foster, Christopher C <cfoster@blm.gov>
Cc Korn, Michael J <mkorn@blm.gov>; Showalter, Rachel M <rshowalt@blm.gov>; Kufta-Christie, Lindsey A <lkuftachristie@blm.gov>; Mowdy, Jason S <jmowdy@blm.gov>

1 attachments (4 MB)
Blue&Gold_2022-2023ARU_NSOSurveySummary_12Feb2024_Final.docx;

Roli and Chris,

Attached is the 2022-2023 summary of ARU results for NSOs in Blue & Gold. We only listed the detections. We did not work through the occupancy status other than where there was a pair detected.

A huge shout-out to Lindsey for her hard thorough work and attention to detail on this effort. Lots of moving parts and data to work through.

Thank you so much for your patience. Let me know if you have any questions.

Liz

P.S. Roli - note that juvenile NOGOs were also detected on one of the ARUS. Reference the footnote in Table 1.

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

Outlook

B&G 2022-2023 ARU Data

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Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

Date: February 12, 2024

Prepared by: Elizabeth Gayner (Wildlife Biologist)
Lindsey Kufta-Christie (Wildlife Bio Science Technician)
BLM, Roseburg District – Swiftwater Field Office

To: Roli Espinosa (Wildlife Biologist)
Chris Foster (Acting Field Manager)
BLM, Roseburg District – South River Field Office

Subject: 2022 and 2023 Northern Spotted Owl (NSO) Detection Summary using Autonomous Recording Units (ARUs) - Supplemental to 6-visit Call-back Survey Effort

Summary: ARUs were deployed in the Blue & Gold Harvest Plan project area to supplement the call-back survey effort. Because of the extremely steep terrain with deep canyons and lack of roads, it was determined call-back surveys inadequately surveyed all NRF habitat in inaccessible areas (e.g., limited ability for surveyor to hear NSO calling from within a deep canyons). Thus, ARUs were deployed to survey these difficult to reach areas and in areas where a NSO were heard but difficult to locate during additional day time searches and nighttime call-back surveys. ARUs were deployed for a six-week duration during the breeding season. Of the 20 ARUs deployed, NSO were detected on 7 and 6 deployment days in 2022 and 2023, respectively (Table 1).

Results: In 2022 20 ARU's were placed within the Blue & Gold Harvest Plan Project Area and were ran continuously for 13 hours a day generally from 1800 to 0600 the following morning, averaging 546 hours per ARU deployment. In 2023, 20 ARUs (in same locations deployed in 2022, dropped Yellow Trib ARU in 2023) and ran for 8 hours a day (1 hour before sunset through 3 hours after sunset and 2 hours before sunrise through 2 hours after sunrise) for at least six weeks averaging 336 hours per ARU deployment. The data was processed using PNW-Cnet v4.2.3 and Kaleidoscope Lite to visually analyze spectrograms and listen to 12-second audio clips (each audio clip produced has a prediction score output > 0.95 for each target class). Audio data was examined and validated to clear false positives and confirm positive detections. ARU detection validation to identify false positives were determined by comparing call-back surveyor times, locations (e.g., distance to callback survey station to ARU and topographical features obstructing sound travel), and the broadcast direction of the callbox at a survey station (stand(s) targeted for survey at that particular station).

Of the 20 ARU's deployed, 7 ARUs recorded detections of NSO vocalizations in 2022 and 4 ARUs recorded detections of NSO vocalizations in 2023 (Table 1).

Table 1. ARU detections of Northern Spotted Owls in 2022 and 2023.

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
2022								
Upper Yellow Creek sta. 1	465993, 4817591	3/16/2022 20:56 21:01	M	Yellow Butte 1992-01	3/16/2022 2052-2102	2.8	2 detections 3-note	
Upper Yellow Creek sta. 3	467333, 4817679	3/16/2022 21:01 21:33	M F	Yellow Butte 1992-01	3/16/2022 2052-2102	2.4	2+ detections 3-note, whistle, bark	**Occupied = Pair** There are additional detections for the same night.
Yellow Butte sta. 1	468366, 4820562	4/27/2022 20:50 21:41 23:28	M	Yellow Butte 1992-06 (466758, 4819991)	4/27/2022 1900-2000 Walk-in	0.84	1 detection multiple vocalizations	No overlap in detection times with call-back survey.
Yellow Butte sta. 2	468683, 4821004	7/12/2022 22:55	F	Marsh Trib 4682-04	2252-2302	1.5	1 detection 2 vocalizations (moderate)	**Figure 1.** Vocalization easily heard and likely in the stand. Call-back distance potentially too far and would expect call to be a fainter recording.
Yellow Butte sta. 4	469939, 4821925	7/1/2022 (6/30 survey) 00:10	F	Yellow Trib 4659-02 Blackberry Canyon 1916-07	0007-0017 0005-0015	1.3 1.29	1 detection 5 vocalizations includes very faint female 3-note and whistle	**Figure 2.** 4659-02 call point – broadcast of callbox should have been in opposite direction of ARU location. 1916-07 call point on opposite side of the ridge over a mile away
Yellow Creek sta. 1	4635715, 4818895	4/6/2022 23:09	M	None	None	NA	1 detection 4 vocalizations (very faint)	
Yellow Creek sta. 1	4635715, 4818895	7/6-7/2022 at 00:38	F	Upper Martin Creek 1972-04	0035-0045	0.7	1 detection 4 vocalizations	**Figure 3.** Ridge top to ridge top with potential ridges in between. Feasible that is it is a call-back survey given overlap in times,

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
								but no tone recorded; needs topographical analysis.
Yellow Creek sta. 1	4635715, 4818895	7/13/2022 21:30	M	Doe Creek 1804-03	7/13/22 2127-2137	1.09	1 detection 1 vocalization (moderately faint)	**Figure 4.** Ridge top to ridge top with potential ridges in between. Feasible that is it is a call-back survey given overlap in times, but no tone recorded; needs topographical analysis.
Yellow Creek sta. 2	464209, 4818224	4/5/2022 20:17	M	None	None	NA	1 detection 5 vocalizations (distant)	
2023								
Doe Creek sta. 7	467626, 4820705	6/14/23 at 20:56	M	None	None	NA	1 detection 9 vocalizations	
Upper Yellow Creek sta. 3	467333, 4817679	6/15/23 at 22:35 22:37 22:41 23:07	M	YEB 1992-13	6/15/23 2232-2243	1.4	1 detection 14 vocalizations (23:07 faint and 26 minutes after call-back survey completed)	**Figure 5.** Call-back on ridge top at ~1,940 feet to ARU at ~1,040 feet. Feasible first three detections are call-back survey given overlap in times, but no tone recorded. 23:07 detection was 26 minutes after call-back survey completed.
Yellow Butte sta. 4	469939, 4821925	5/10/23 at 03:55	M	None	None	NA	1 detection 1 vocalization	
Yellow Butte sta. 4	469939, 4821925	5/22/23 at 22:39	**Pr**	None	None	NA	1 detection 4 vocalizations (3-notes includes a BARK)	**Occupied = Pair**

ARU ID[1]	ARU Location (UTM Coordinates)	Date & Time of Detection	NSO (M, F, Pr)[2]	Call-back Survey Station[1]	Call-Back Survey Date, Start & End time	Distance from Call-back Station to ARU (miles)	Number of Validated NSO Detections/ Vocalizations	Notes
Yellow Creek sta. 3	465221, 4818336	7/27/23 at 22:42	M	Bear Creek 1972-06	7/27/23 2246-2256	0.6	1 detection 4 vocalizations	**Figure 6.** Possible survey? Detection 4 min prior to start of call-back survey which should have been broadcasting to the west (towards Bear Creek site); ARU to the southeast, but elevation is similar and within direct line distance for potential audibility.
Yellow Creek sta.3	465221, 4818336	8/3/23 at 21:34	M	Snail Canyon 1980-13 Blackberry Canyon 1916-08	8/3/23 2133-2143 8/3/23 2134-2144	3.8 4.97	1 detection 1 vocalization	Distance to ARU to call-back stations are too far.

[1]ARU ID is not associated with NSO site name.
[2] F = Female, M = Male, Pr = Pair.
[3] Note: Juvenile Northern Goshawk detected 4/27.

Figure 1. Yellow Butte 1 (YEB 2) to Callback Survey Station 4682-04.

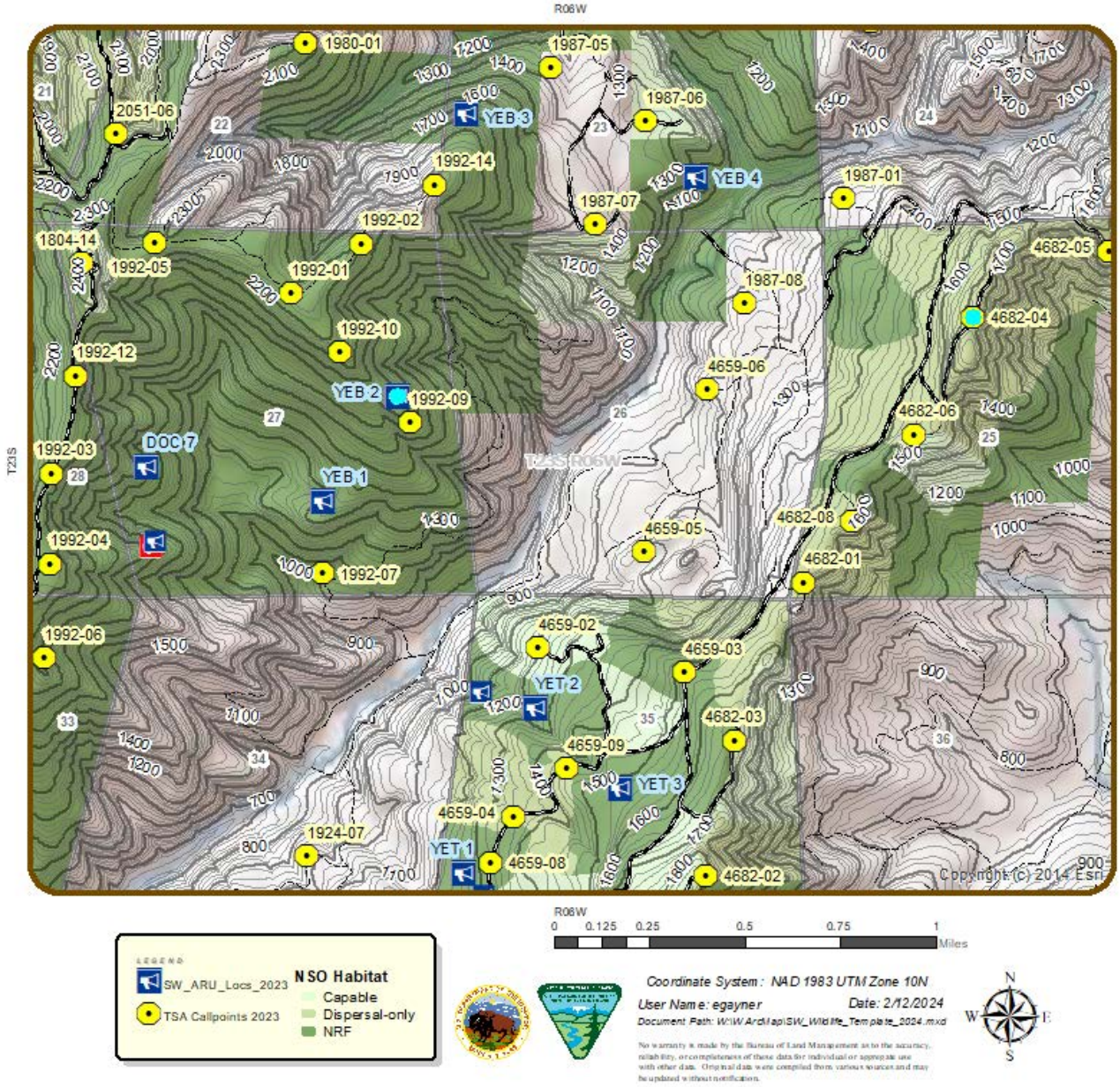


Figure 2. Yellow Butte 4 (YEB 4) to Callback Survey Stations 1916-07 and 4659-02.

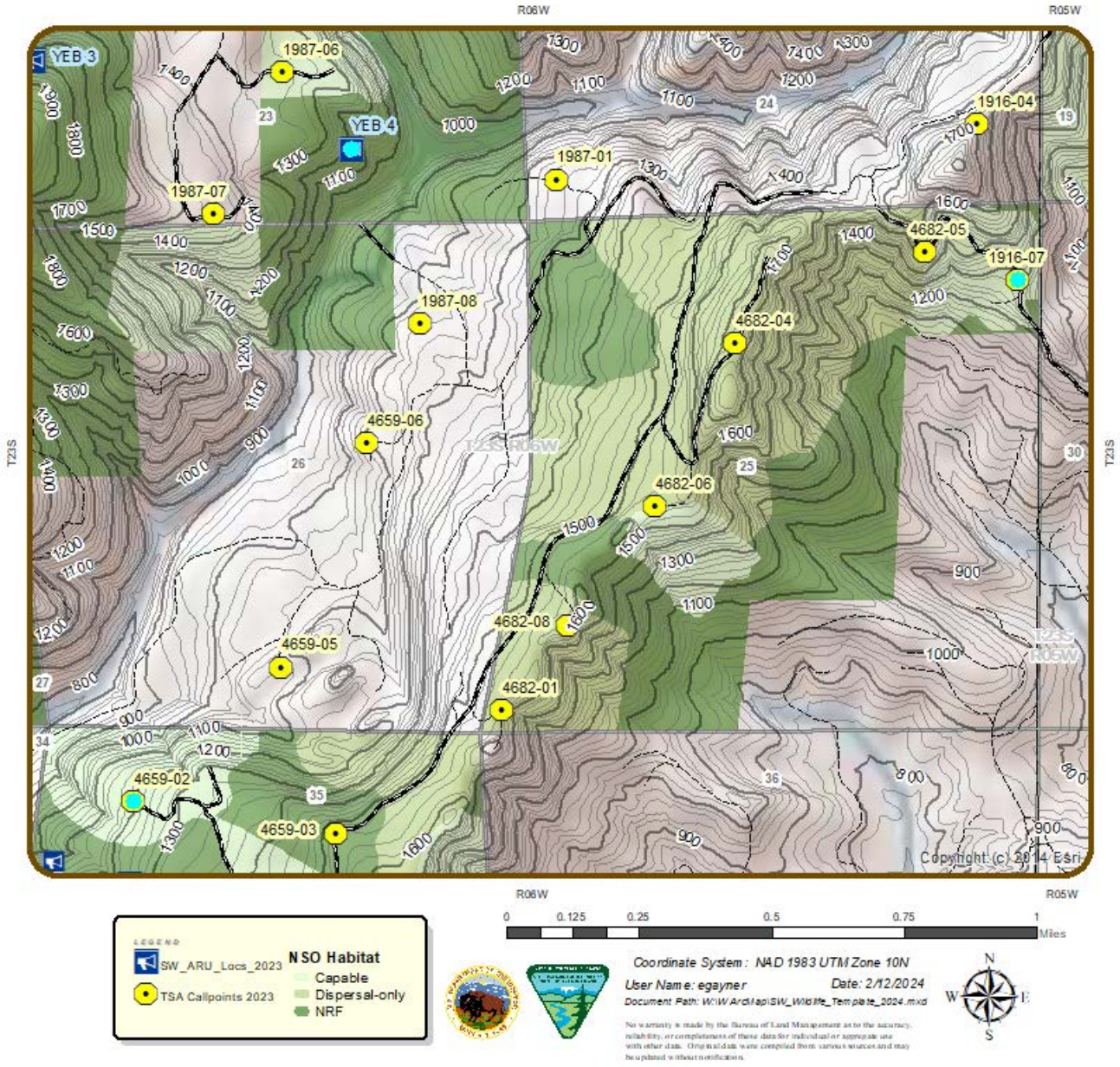


Figure 3. Yellow Creek 1 (YEC 1) to Callback Survey Station 1972-04.

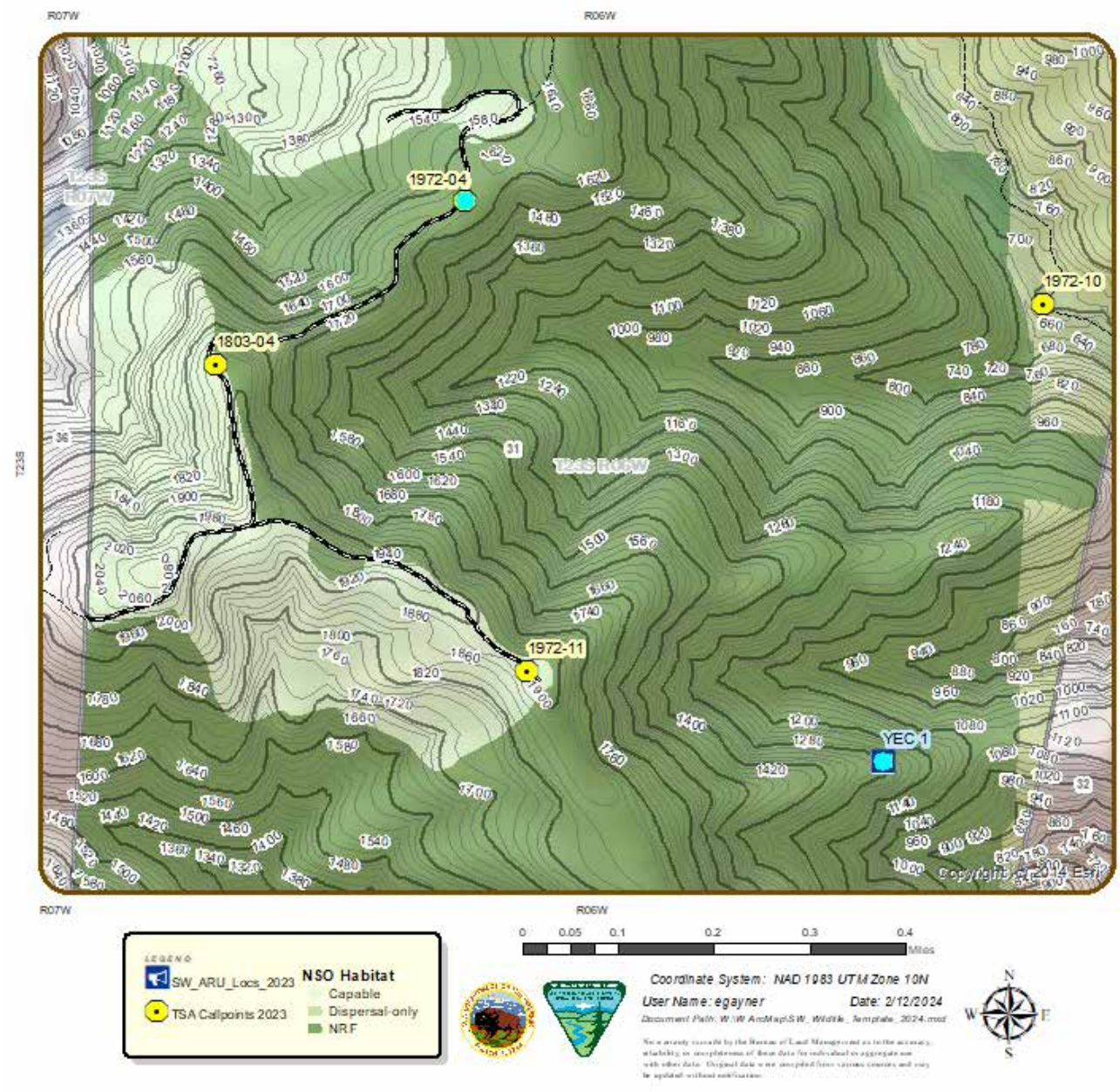


Figure 4. Yellow Creek 1 (YEC 1) to Callback Survey Station 1804-03.

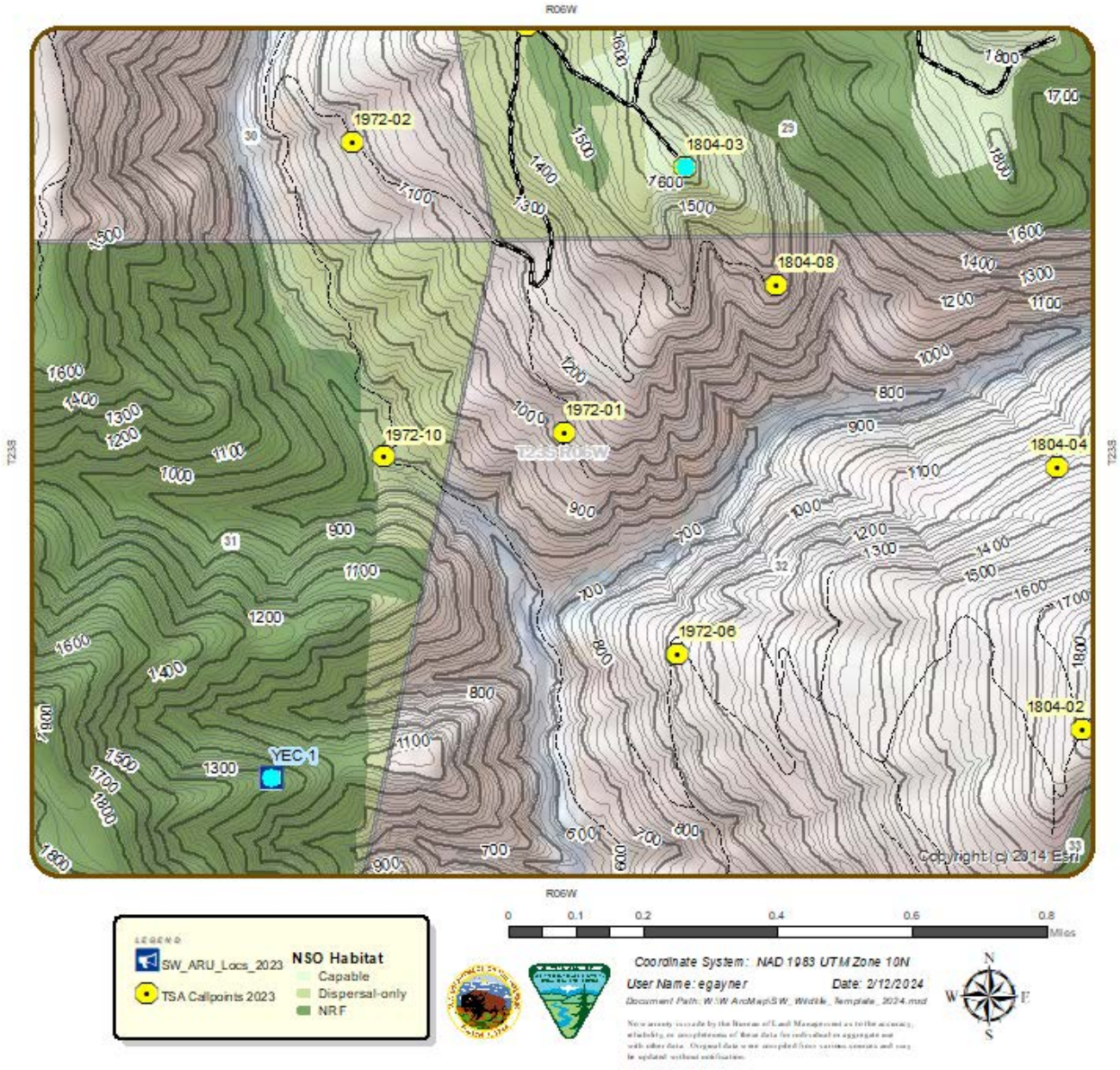


Figure 5. Upper Yellow Creek 3 (UYC 3) to Callback Survey Station 1992-13.

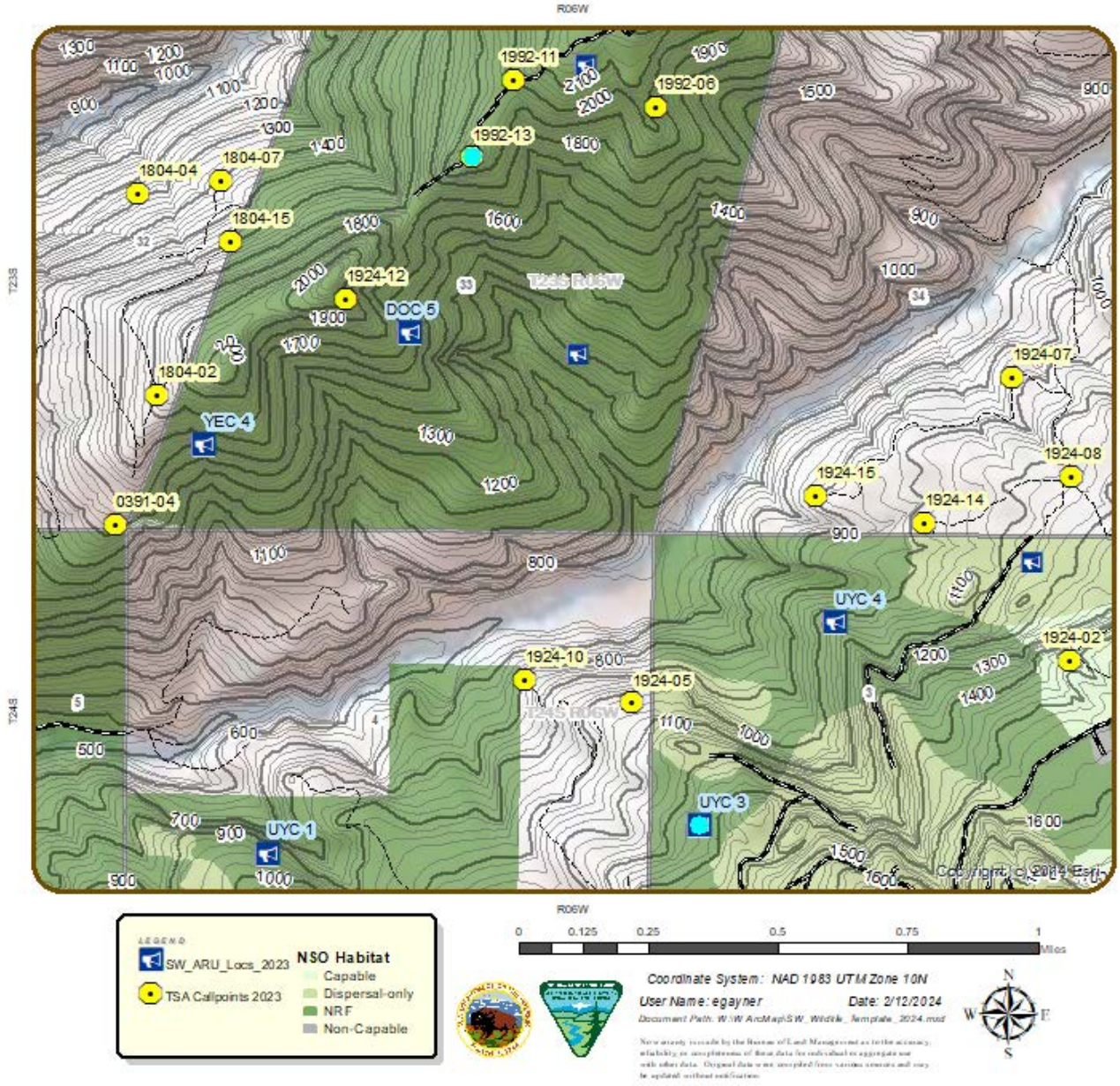
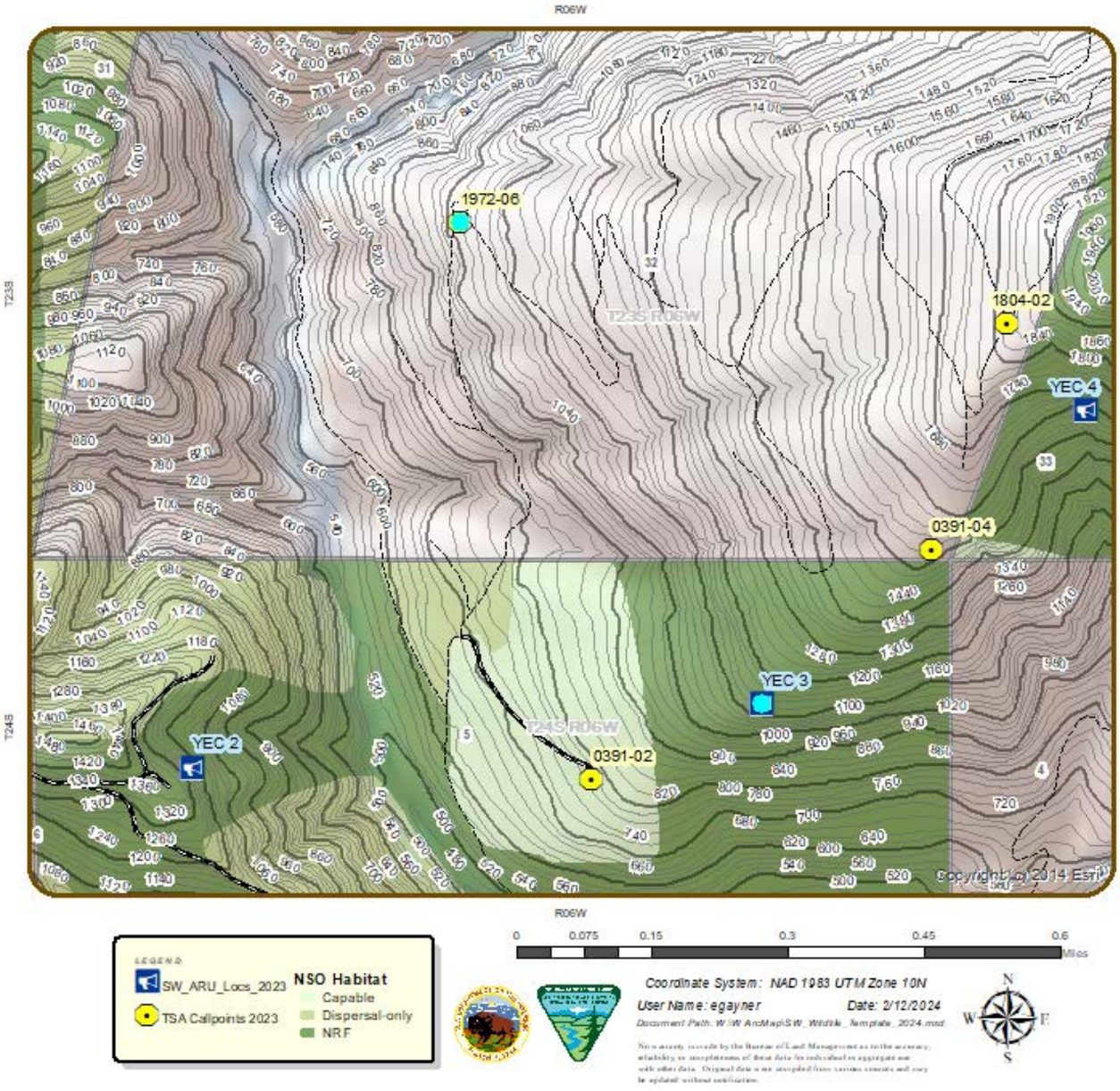


Figure 6. Yellow Creek 3 (YEC 3) to Callback Survey Station 1972-06.



Notes:

Most recent literature to consider when determining results and NSO occupancy status:

Appel, Cara L., Damon B. Lesmeister, Adam Duarte, Raymond J. Davis, Matthew J. Weldy, and Taal Levi. 2023. “Using Passive Acoustic Monitoring to Estimate Northern Spotted Owl Landscape Use and Pair Occupancy.” Ecosphere 14(2): e4421. https://doi.org/10.1002/ecs2.4421.

Based on Hane et al. (2022) who investigated detection distance and coverage area with automated detectors (ARU) for NSO:

- At distances less than 250 meters, the CNN correctly identified occupancy in more than 73 percent of trials.
- Areal coverage was a function of distance from source to microphone, location of the source relative to the microphone, and method of call analysis.
- Calls broadcast toward the microphones were more likely to be detected than calls broadcast away from the microphones.
- At 200 meters the estimated mean detection probability averaged over the five microphones for Kaleidoscope was 0.21 (95% CI: 0.17–0.26).
- For an estimated detection rate of at least 50 meters, distances ranged from 70–150 meters.
- a detection radius of 300 meters with the CNN method covers an area only one half as large as assumed in traditional surveys (400 meters/0.25 miles).
- The theoretical communication limit of a NSO call broadcast in a forest is between 300–600 meters (0.19 – 0.37 miles).

Hane, M. E., J. E. Thornton-Frost, A. Springford, and A. J. Kroll. 2022. Factors associated with automated detection of Northern Spotted Owl (*Strix occidentalis caurina*) four-note location calls. Avian Conservation and Ecology 17(1):26. https://doi.org/10.5751/ACE-02105-170126.

Outlook

Wildlife Mini Meeting Notes

From Gayner, Elizabeth I <egayner@blm.gov>
Date Tue 4/12/2022 15:27
To Wise, Heather R <hwise@blm.gov>

Hey Heather,

Here are notes from the meeting from the time you left...

ARU – FWS feels the PNW should determine an activity center. PNW disagrees and only determines occupancy at a hexagon level. Still being sorted out…

MATOC – thanks for those that contributed comments. Rex met with District Bios this morning… worked through comments. Punchline is we are going to have a MATOC for MAMU, NSO, and RTV. There are District specifics as well as areas in MATOC that are common to all. There will be latitude over some things, such as flagging colors. Carole (CB) lead for MAMU, Robin (MF) lead for NSO, and Sonya (NC) lead for RTV. Will have comments incorporated within a week.

Roli wants to have the language about how the contracts will be awarded… e.g., can we choose the same contractor for 2-3 years in a row for a project? The MATOC team doesn't have answers. Such questions will get forwarded to the SO.

Roli – how long is MATOC going to be implemented for?

Rex does not have answers. "Time will tell."

Walk-in premium for over a half-mile and then 1-mile increments after that. Roli doesn't think we even need a walk-on premium. The current contractor put a minimal cost on it implying they are not that concerned about it.

Liz – measuring by half-mile increments is ridiculous. Gives a way for the contractor to nickel and dime us.

Jason – stated it really needs to be identified clearly how these measurements will need to be documented/counted (e.g., straight line from truck vs serpentine path to station).

Other discussion was about crew leads and required experience. All over the board among Districts from 1 -3 years of experience. The MATOC team agreed on requiring 2 years of relevant experience.

Roli's newscast – task order for MAMU contract has been received!

Franklin's Bumble Bee - Rex has high priority zones. He needs to finish up whatever he was going to do with it… clean it up and send us an email with the GIS layers are located. Hasn't had any further discussions with the FWS about what the high priority zones really mean. Using the Weed BA as a vehicle to push that discussion.

Jason - there is an assumption by SR managers that surveys will be completed in B&G and 42 Divide... at least one round of surveys this year. Don't know who is going to do the surveys... both crews are super busy.

Liz - Chris told me that he would be doing some surveys out and B&G this year. I plan to do surveys at projects at Rock Creek and Canton Creek. NBHMA.

Roli - There is a big learning curve. Takes a lot of time to identify them. Take good photographs at the time. B&G meadows in hab layer = about 10 acres... in reviewing the hab layer for MAMU... there are some other meadows to add. Throwing in 42 Divide would not be realistic... there is a lot of bee habitat that would not be feasible to survey this year given our staffing. We would need to have a crew of people to this.

Jason - Need to evaluate what it would take for all of the projects. We will work together to figure out how to tackle the bee workload.

Rex - who is trained up? Liz, Roli, Cindy, and Erich at this moment. There is also the weed treatment areas that would need to be surveyed too. Will check with Summer about prospects of doing a joint training.

Will the Rapid Habitat Assessment be part of the process? Rex says it would be prudent to pursue so we have some indication of quality of habitat that we are surveying in. We agreed that it would be part of the survey process.

Consultation Monitoring – has not been touched. We will get to it when we have time, and we just don't have time right now.

RMP Monitoring – due at the end of next week. Implemented projects that are to be monitored are all in South River. Roli has looked at the spreadsheet to understand what it was and means. There is missing data from previous years, but not going to worry about that right now. Just focus on the 2021 data. Needs to do write-up for three SR projects. Need to identify why a project was being surveyed... habitat removal or disruption or both.

Roli stated that one reason to survey relevant to MAMU was to avoid site loss (ex premise of manager in 2020 was he did not want site loss, so survey it).

Other Topic

Jason brought up that PNW reached out about placing ARUs on Tyee and/or Klamath around two active site centers this year. 37 ARUs would be deployed around that activity center to determine detection rate in a given year. They would like a list of sites by end of month. Showed map of example of ARU deployment locations at the Upper Green Site. Wait to pass on site info until after second visit to determine if a solid pair. Roli's concern is the significant about of disruption given the number of ARU in the site. Rex concerned about convoluting the site issue with PNW without them giving us the information in a timely manner. Liz suggested maybe to check one of the sites up Canton Creek that was most recently occupied... if any of those are occupied, can recommend one or two in that area that would not potentially compromise a TS project. Roli recommends just providing a list of sites to PNW and let them pick the area they want.... then it is their call, not ours. Roli and Liz think this information is valuable. Jason - in an ideal world, put grid on two adjacent sites... would be valuable too. Will have another meeting near the end of the month to determine site list and discussion.

Rex - got an early alert that tomorrow the Streaked-horned Lark is going to get listed as Threatened. The Federal Register Notice will be posted tomorrow.

Hope this makes sense!

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

Outlook

2024 - ARU use in Blue & Gold

From Gayner, Elizabeth I <egayner@blm.gov>
Date Thu 8/15/2024 10:51
To Price, Amy L <amy_price@fws.gov>

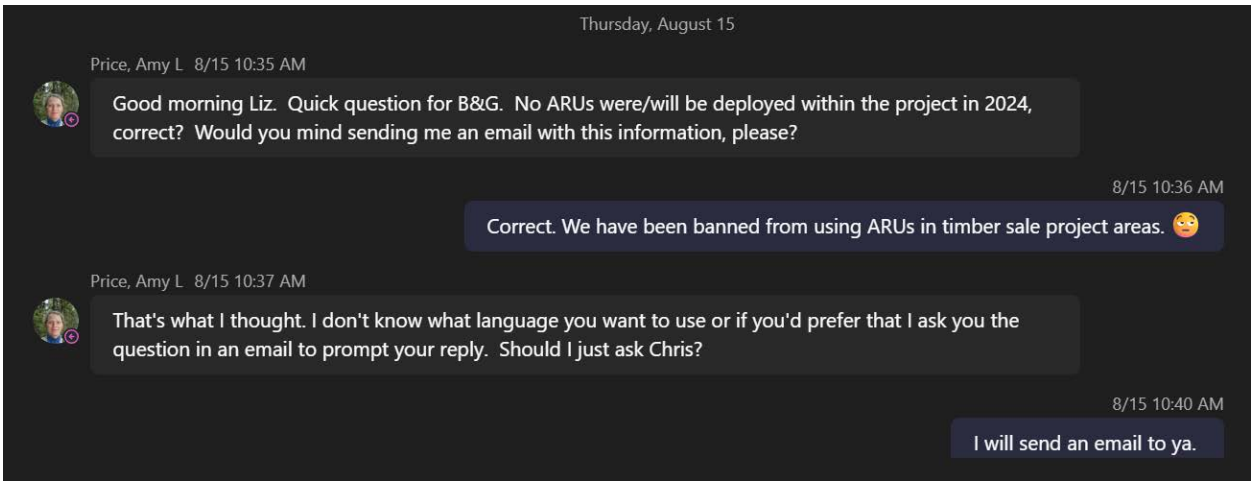
Hi Amy,

I am confirming that, per Swiftwater's Field Manager's direction, BLM did not deploy ARUs in 2024 within the areas previously surveyed with ARUs within the Blue and Gold Project Area. We used ARUs as a supplement to the 2012 NSO survey protocol to ensure survey coverage of areas that were not adequately covered due to safety concerns in very steep terrain and lack of road access. However, we contracted our NSO surveys in 2024 to Hamer Environmental who has ensured they could adequately survey these areas via the 2012 NSO survey protocol.

Let me know if you need additional information.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov


Thursday, August 15
Price, Amy L 8/15 10:35 AM
Good morning Liz. Quick question for B&G. No ARUs were/will be deployed within the project in 2024, correct? Would you mind sending me an email with this information, please?
8/15 10:36 AM
Correct. We have been banned from using ARUs in timber sale project areas.
Price, Amy L 8/15 10:37 AM
That's what I thought. I don't know what language you want to use or if you'd prefer that I ask you the question in an email to prompt your reply. Should I just ask Chris?
8/15 10:40 AM
I will send an email to ya.

Outlook

Blue and Gold Harvest Plan Environmental Assessment and unsigned Finding of No Significant Impact

From Whitman, Heather L <hwhitman@blm.gov>
Date Fri 7/29/2022 5:48 PM
To BLM_OR_RB_All <BLM_OR_RB_All@blm.gov>

Good afternoon,

It was recently brought to my attention that employees have questions on the status of the Blue and Gold Harvest Plan EA. I'm hoping the following provides an adequate update. If not, I'm open for questions and conversations (after I return on August 8th 😀).

Back on April 28th, I asked for the Blue & Gold EA and unsigned FONSI to be removed from ePlanning because 1) the state office and headquarters were not aware of the proposed project that is a bit controversial, and 2) the documents were posted within five days after the President signed the *Executive Order on Strengthening the Nation's Forests, Communities, and Local Economies*, which is partly about the BLM and the USFS defining, identifying, and completing an inventory of old-growth and mature forests on federal lands. In addition, immediately upon the EA and unsigned FONSI being posted on ePlanning, media and members of the public started contacting the BLM expressing concerns about the proposed actions outlined in the EA.

After the EA was removed from ePlanning, I let Mike and Sarah know that I planned to review the EA and unsigned FONSI, which I had not done before it was posted. I started that review back in May, and since then, multiple conversations have occurred among our staff, as well as with other districts and agencies and the state office, regarding our FY 2023 ASQ achievement, autonomous recording units (ARU), habitat modifications, etc. Of course, not all employees were involved in these conversations, but many of you participated and know some of the issues.

One issue I think you all should know about because I am sure it is being discussed in some form around the office: To avoid incidental take of northern spotted owl (NSO) territorial pairs or resident singles from timber harvest until a barred owl management program is implemented (as required by our RODs/RMPs), we planned to have had at least two years of complete and valid NSO call-back protocol surveys in the Blue and Gold EA analysis area to determine NSO occupancy to avoid incidental take. However, we discovered earlier this year/late last year that three of the historic NSO sites were not

surveyed to call-back survey protocol standards, and the home ranges of these historic sites were all predominantly NRF habitat. Therefore, the acres within those NSO home ranges could not be proposed for regeneration harvest because that would result in a determination of incidental take. Any historic NSO sites that are not surveyed to protocol are presumed occupied and have limitations on our management actions.

In addition, we were provided information late this spring that NSO were detected by the Pacific Northwest Research Station using autonomous recording units (ARU) in the former Tyee density study area, and based upon the pilot ARU protocol for project clearances, those results indicated NSO occupancy in two ARU hexagons. Because of this, our biologists, as well as biologists from the state office, other districts, and other agencies, have been working on the best way for us to analyze this information in our EA documents. Those biologists have agreed to an analytical methodology that is similar to the method they use for call-back survey protocol analysis. For the Blue and Gold EA, this affected additional proposed regeneration harvest unit acres.

What this all means is that the Blue and Gold EA must be modified, as some of this was unknown when the EA was finalized, but we know it now. Our DLT members, along with other staff, are figuring out a strategy for making modifications to the EA and are trying to figure out the timeline, with the consideration that if we make adjustments to the proposed actions, we may need to re-scope the project for the public to be aware and to participate. To adhere to the "no take" provision, we may have to either consider avoiding timber sales in certain locations or reducing the intensity of our timber harvest of NRF habitat within the home ranges of occupied NSO sites, for example. We need to continue to remind ourselves that we do have flexibility in scheduling the order in which stands are harvested in the HLB to avoid incidental take of NSOs, even if that means some work may need to be paused. Your resiliency and thoughtful public lands management are really appreciated.

Like I said, I hope this update answers questions I am told folks are asking. If not, please talk with me about the status of this project.

Heather

Heather Whitman
District Manager
==========
Bureau of Land Management
Roseburg District
777 NW Garden Valley Boulevard
Roseburg, Oregon 97471
(541) 464-3200 Phone
==========

The Bureau of Land Management's mission is to sustain the health, diversity, and productivity of America's public lands for the use and enjoyment of present and future generations.

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From: Bickford, Sarah <sbickfor@blm.gov>
Sent: Monday, May 2, 2022 12:17 PM
To: BLM_OR_RB_All <BLM_OR_RB_All@blm.gov>
Subject: Fw: Notice of Availability – Blue and Gold Harvest Plan Environmental Assessment and unsigned Finding of No Significant Impact

Good Afternoon - The State Office (SO) and Washington Office (WO) were not aware of the release of this EA. We pulled the EA back, and are working on the Week Ahead Report to the SO for notification prior to the release on E-Planning. If you have any questions please reach out to either myself, Mike, or Heather.

Thanks, Sarah

From: RB_Mail, BLM_OR <BLM_OR_RB_Mail@blm.gov>
Sent: Friday, April 29, 2022 12:12 PM
To: RB_Mail, BLM_OR <BLM_OR_RB_Mail@blm.gov>
Subject: Re: Notice of Availability – Blue and Gold Harvest Plan Environmental Assessment and unsigned Finding of No Significant Impact

Good afternoon~

The Roseburg District, Bureau of Land Management is temporarily suspending the public comment period for the Environmental Assessment (EA) and the unsigned Finding of No Significant Impact (FONSI) for the Blue and Gold Harvest Plan EA. A revised notice for the comment period will be provided following additional internal review.

Bureau of Land Management
Roseburg District Office
777 NW Garden Valley Blvd.
Roseburg, OR 97471
541-440-4930

From: RB_Mail, BLM_OR <BLM_OR_RB_Mail@blm.gov>
Sent: Wednesday, April 27, 2022 2:44 PM
Subject: Notice of Availability – Blue and Gold Harvest Plan Environmental Assessment and unsigned Finding of No Significant Impact

The Roseburg District Bureau of Land Management Environmental Assessment (EA) and the unsigned Finding of No Significant Impact (FONSI) for the Blue and Gold Harvest Plan EA (DOI-BLM-ORWA-R040-2020-0001-EA) are available for review. The documents will be published on April 27, 2022, on the Bureau of Land Management National NEPA Register (ePlanning) website at: https://eplanning.blm.gov/eplanning-ui/home. The 30-day comment period will begin April 28, 2022.

The BLM welcomes substantive comments on this proposal by 4:30 PM Pacific Time on Friday, May 27, 2022. You may submit your comments via email at: BLM_OR_RB_Blue_and_Gold_Harvest_Plan_EA@blm.gov. Please specify the project name in the subject line of your email.

You may also submit written comments to Mike Korn, Bureau of Land Management, 777 NW Garden Valley Blvd., Roseburg, OR 97471.

For further information, contact Kelly Ware, Roseburg District, Bureau of Land Management, 777 NW Garden Valley Blvd., Roseburg, OR 97471, 541-440-4930 or at kware@blm.gov.

Bureau of Land Management
Roseburg District Office
777 NW Garden Valley Blvd.
Roseburg, OR 97471
541-440-4930

Here are a few updates:

-rm actually moved out on time

-had meeting RE B&G NSO surveys with Liz, Jason, and Chris and we asked 5 different ways if we were covered by ONLY 6-visit call back protocol and the answer was YES and that the ARU data is sheerly supplementary.

Outlook

Re: Call points & Habitat coverage in B&G

From Korn, Michael J <mkorn@blm.gov>
Date Wed 2/21/2024 2:05 PM
To Mowdy, Jason S <jmowdy@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>; Showalter, Rachel M <rshowalt@blm.gov>; Foster, Christopher C <cfoster@blm.gov>

Sounds like Monday 9-11 works for everyone. I'll send the invite

Mike Korn
Swiftwater Field Manager
Bureau of Land Management
777 NW Garden Valley Blvd
Roseburg, Oregon
541-464-3211

From: Mowdy, Jason S <jmowdy@blm.gov>
Sent: Wednesday, February 21, 2024 11:25 AM
To: Gayner, Elizabeth I <egayner@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>; Showalter, Rachel M <rshowalt@blm.gov>; Korn, Michael J <mkorn@blm.gov>; Foster, Christopher C <cfoster@blm.gov>
Subject: Re: Call points & Habitat coverage in B&G

Any time next week works for me.

-Jason

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, February 21, 2024 10:51 AM
To: Espinosa, Rolando H <respinos@blm.gov>; Showalter, Rachel M <rshowalt@blm.gov>; Korn, Michael J <mkorn@blm.gov>; Foster, Christopher C <cfoster@blm.gov>; Mowdy, Jason S <jmowdy@blm.gov>
Subject: Re: Call points & Habitat coverage in B&G

I am currently open on Monday the 26th.

Liz

From: Espinosa, Rolando H <respinos@blm.gov>
Sent: Wednesday, February 21, 2024 06:41
To: Showalter, Rachel M <rshowalt@blm.gov>; Korn, Michael J <mkorn@blm.gov>; Foster, Christopher C <cfoster@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; Mowdy, Jason S <jmowdy@blm.gov>
Subject: Re: Call points & Habitat coverage in B&G

Greetings all,
Below are my available times-please note-they are similar but slightly different.

2/21/2024- Not available; COR training
2/23/2024- Can squeeze a meeting from 0800-1200 hours; and 3:00-4:30 pm
2/26/2024- Can squeeze a meeting from 0900-1100 hours; and 1:30-4:30 pm
2/27/2024- Can squeeze a meeting from 0900-1100 hours; and 1:30-4:30 pm

Roli

From: Showalter, Rachel M <rshowalt@blm.gov>
Sent: Tuesday, February 20, 2024 19:10
To: Korn, Michael J <mkorn@blm.gov>; Foster, Christopher C <cfoster@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; Mowdy, Jason S <jmowdy@blm.gov>
Subject: Re: Call points & Habitat coverage in B&G

I can make any of those times except next Tuesday afternoon work!

Get Outlook for iOS

From: Korn, Michael J <mkorn@blm.gov>
Sent: Tuesday, February 20, 2024 10:11:26 AM
To: Showalter, Rachel M <rshowalt@blm.gov>; Foster, Christopher C <cfoster@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; Mowdy, Jason S <jmowdy@blm.gov>
Subject: Call points & Habitat coverage in B&G

All, recent survey effort in B&G has been augmented with the use of ARU"s of which I have heard mixed statements on whether our protocol survey effort within the B&G planning area has established call points that are or are not adequate in providing appropriate coverage of the existing suitable habitat for consultation. As such I would like to meet as a group and get concurrence one way or another.

This is critical that we reach a consensus on the matter as it dictates what needs to be done with our survey effort moving forward as well as to avoid possible mixed messaging to the service during consultation. With whatever the conclusion is it will define how we approach our continuing survey effort as I understand B&G is moving forward under a task order rather than in house surveys.

I would think this needs to be addressed soon (before surveys start). I can make myself available this Wednesday afternoon (2/21), all day Friday, All day Monday and next Tuesday afternoon. Let me know what days are open and I'll send a meeting invite.

Mike Korn
Swiftwater Field Manager
Bureau of Land Management
777 NW Garden Valley Blvd
Roseburg, Oregon
541-464-3211

FYI, talked with Jason and it sounds like PNW released their owl data. He said it goes to OSO (Carol Aron) who then disseminates the data. I told Jason to ping her and let her know it's critical we get that data ASAP. Hopefully we have closure in the next week as far as B&G. I'm sure Barry and Anita are going to want to know if were in the clear on that end as well.

Outlook

Fw: NSO survey status

From Showalter, Rachel M <rshowalt@blm.gov>
Date Tue 6/15/2021 8:35 AM
To Korn, Michael J <mkorn@blm.gov>

Email string from conversations w Marnie. This does not include all the emails, but will give you a general idea of the tone. Read from bottom up. I also sent an email directly to Marnie, will forward that next.

Rachel Showalter
Asst Field Mgr, Swiftwater Field Office
Roseburg District BLM
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541.464.3227 (office)
(b) (6) Personal Privacy (work cell)
rshowalt@blm.gov

From: Showalter, Rachel M <rshowalt@blm.gov>
Sent: Monday, June 14, 2021 10:34 PM
To: Keller, Marnie N <mkeller@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>
Subject: Re: NSO survey status

Hey there Marnie (and Liz),

It sounds like there have been some serious leaps in our survey progress since SR is in the mix with 6 folks ! That is excellent, and I so appreciate the groundwork / coordination.

The news (b) (6) Personal Privacy also sounds encouraging....at least from the aspect of having additional hands that can help the situation.

Unfortunately, it also sounds like there have also been a few serious leaps in the form of communication which has led to a fairly weighty misunderstanding that merits our attention as leaders and coworkers....

I would like to propose a meeting between all three of us - I think there are some major victories we need to celebrate, as well as some challenges we should discuss that may clear the air, so to speak, and finally, to hear and agree on the trajectory for the rest of the field season.

An in-person meeting is overdue..... I think email only gets us so far .

Please let me know if you can meet this Thursday after the NRS meeting? I will be in the office and can hang around however long we need.

Thank you, and please know I value both of you very much and look forward to meeting with you.

Best,
Rachel

Rachel Showalter
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From: Keller, Marnie N <mkeller@blm.gov>
Sent: Monday, June 14, 2021 5:26 PM
To: Showalter, Rachel M <rshowalt@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>
Subject: Re: NSO survey status

Jason said he can give us 6 people this week, including himself, and will be able to help in the upcoming weeks as well, but will let me know when it gets closer. With a second crew helping us, it shouldn't be a problem to get 2nd visits done by June 30th.

We did nest checks at Rookery and Melrose and had 1 fledgling at Rookery, but only whitewash and downy feathers at Melrose, which made Heather suspect predation. We will be doing another nest check at each of those places this week. I had a second pair detection at Upper North Fork, and a second non-nesting there. Claire and Gina got the male from Mother Hubbard at Western Camp and a female at Mother Hubbard, but when Claire and Erich went back for the follow-up, they couldn't find them in the daytime. There was also a Barred owl calling when they got the male during the night, which is most likely why they couldn't get a detection during the day there.

As far as (b) (6) Personal Privacy , so hopefully, things will get a bit easier for all of us in the next few weeks.

Two things I need at this point, more from Liz than from Rachel, are understanding and trust. I believe I was hired for this position because I was trusted to do the job. I have been given a lot of things that were completely new to me, with little time to prepare, and very little guidance. As frustrating as that has been, I have been trying my best to accomplish the impossible, figuring things out along the way, asking for help from those I trust, such as Jason and Heather, because they have been the subject matter experts on NSO surveys for many years. Therefore, I would like to be trusted to do what needs to be done, and if I don't, I will happily step down from this position and take all the blame. NO ONE on the crew are slackers. We do what we do, when we do it, for good reasons. I would like to be given the benefit of the doubt that we are doing the best we possibly can given the circumstances. If two people go on a survey together, it's not to make it more fun, it's to make it more successful, to gain experience and sometimes to make it safer. The reason I send Gina and Claire on follow ups and nest checks with more experienced people is because they have zero experience with actual spotted owls. They have listened to recordings and saw one single male last year. Therefore, I feel it is common sense to make

sure they are getting as much interaction with the owls we are finding as possible, so they know their jobs. The fact that we are stretched for time isn't their fault, so I don't feel that opportunity for experience should be taken away from them. The same goes for the rest of the crew. It has been a long time since we've had a nest to check, so one day allowing everyone the experience, since we only have 2 nests to check, doesn't seem like too much to ask. It saddens me to be second guessed when that occurs. Never in my life have I been called a slacker or a quitter, so the comments coming my way inferring those things is disheartening and incredibly discouraging. Morale is imperative when so much is being asked of people. I would hope that it was put high on the priority list.

Thank you for the words of encouragement and the effort to assist us, it means a lot.

All for now,
Marnie

From: Showalter, Rachel M <rshowalt@blm.gov>
Sent: Tuesday, June 8, 2021 17:37
To: Keller, Marnie N <mkeller@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>
Subject: Re: NSO survey status

Hey!

You guys are really busting it and your efforts are not going un-noticed.

Do you want me to do a more formal request for more help from South River, so we can get a few more staff for a couple weeks to help give us a little catapult into the second/third visit realm? I cannot in good conscience know you are working 17 hour days without saying something - that is too much and I am worried about burnout, which, maybe I am offbase, appears to be setting in. I can only surmize the dual weights on your shoulders - the heavy workload associated w the new demog area coupled [redacted] (b) (6) Personal Privacy [redacted] and I am not gonna lie, it took it's toll on my patience and I felt anxious about things that normally would not have given me any pause. So, I get it, 100%, and what I need to know is what I can do to help ease your load(s)... I am a fairly effective coordinator, I just need to know what you need so I don't throw a wrench into the works on accident.

So, give me something to run point on.....in separate but related news, the GS6 term is flying, so with any luck, if we have local candidates that do not have to contend with a significant move, maybe we could have them on by mid-late Aug. I think that will be just in the nick of time to be of little help, but you just never know.

Thanks,
Rachel

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From: Keller, Marnie N <mkeller@blm.gov>
Sent: Tuesday, June 8, 2021 2:18 PM
To: Gayner, Elizabeth I <egayner@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

I wrote a long email and somehow accidentally deleted it all. I worked 17 hours yesterday, slept 3 and will be working another 17 today. I let you know we are checking fledges Wednesday and Thursday. When I said "we're" checking nests Wed/Thurs, I was letting you know when it was going to happen. I didn't say the entire crew is doing them. "We're" still figuring out who is doing them. They will be getting done. If you're talking about BAEA, I told Cindy, Erich and Heather they need to do them, they know they do, and are getting them done. We are doing night surveys in addition to day work.

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, June 8, 2021 13:51
To: Keller, Marnie N <mkeller@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

Marnie,

Follow up to my previous email...

Heard back from Werner. As a result of what he told me, I emailed Erich and Jason and asked them to help with NSO surveys instead of doing hab reviews on Thursday. Also told Erich to help with NSO the rest of the month. However, I do need his help with ARUs when the time arises here and there. We are still waiting for new units to arrive.

I also forgot I have a (b) (6) appointment this afternoon (needed to leave 10 min ago) and then will need to get back online with FWS when I get back. So, will try and touch base with you tomorrow. If you could please clarify the plan for fledge checks, I would appreciate it.

Thanks,

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464 3381; egayner@blm.gov

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Monday, June 7, 2021 23:35
To: Keller, Marnie N <mkeller@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

Ok, thanks for filling the information gaps re first and second visits.

I do need clarification regarding fledge checks... is everyone doing them Wed/Thurs? And will they be done in lieu of night surveys or done before night work? If in lieu of night surveys, then only two people need do the nest checks (given only two nesting sites) and the others can do night surveys.

Regarding Erich's time, I was going off what you told me a couple of weeks ago... that Heather and Erich were doing NSO two nights per week in June. So, until I heard otherwise, I assumed all was on track. I am waiting to hear from Werner if a particular sale needs habitat review sooner rather than later (originally review was due June 1st). I was tentatively planning on going out to that sale with Jason and Erich on Thursday. If Werner can somehow wait until I can get out there next week with Rex (we are dealing with BO issues for the Archie fire... which is hindering our ability to get to the field more timely this week), then Erich and Jason can do NSO surveys instead. If I need to get the sale reviewed this week, then the guys and I will do so on Thursday, and I can help with NSO surveys next week.

With that said, I talked with Janice further about the visit situation and on occasion under extenuating circumstances, they were not able to meet the two visits by June 30th and therefore for some sites, they used July 15th as the target date. So, sounds like that option would help this year. For the two visits by June 30th, please prioritize sites that are within Blue and Gold, sites that have been occupied in the last 10 years, and Whipples Haven. With pushing to July 15th for second visits, it is going to make getting four visits completed by end of survey season challenging. Let's see how third visits go and determine plan of attack for four visits later. I am thinking it will be the same prioritization as listed above.

I have a meeting with FWS most of the day tomorrow. So, if I get done at a reasonable time in the afternoon, I will try to give you a call to further touch base on this. Otherwise, it would have to be Wednesday.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
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From: Keller, Marnie N <mkeller@blm.gov>
Sent: Monday, June 7, 2021 14:07
To: Gayner, Elizabeth I <egayner@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

I'll keep track of the sites SR is doing.

The reason 2nd visits are being done when 1st visits haven't been done is because when we have issues precluding us from 1st visits, we're doing 2nd visits as a Plan B for efficiency sake, so we're not going home or standing around with nothing to do. I'm also having Gina and Claire do 2nd visits at sites where we've already done first visits where issues have been resolved, in order to make their time more efficient. It is complicated and not easily explained over email, so if you want further clarification, please just call me or Teams call me.

We will be doing fledge checks on Wednesday/Thursday.

We are struggling to finish 2nd visits by the end of June and most likely will not be able to, so although I understand you needing Erich, it's taking a surveyor away from the NSO effort, so it's your choice. Both Erich and Jason could be helping with NSO surveys, but that's up to you and management.

As I said at the beginning of all of this, when I was giving you my honest thoughts and you told me I was "giving up", it's going to be close to impossible to make this happen given the staffing and time we have been given. It's impossible to predict something that I know very little about. I'm giving you a prediction based on the little I know, which is how many people it takes to do a certain number of surveys in a certain amount of time, with all other factors negligible. This doesn't take into consideration all of the significant factors involved in this particular situation, like road access, none of the crew knowing any of the sites, not having anyone to ask for help, not knowing preferred roads, whether we have access at all, having to make maps on a daily basis rather than having them available up front, new crew without much knowledge and no time for training, GIS issues, computer issues, gate key issues, weather, sickness, exhaustion. I can't tell you in black and white terms whether we will be able to finish or not. We are breaking our backs trying. That's all we can do, and it's more than we should have to.

I will never turn down a meeting to get us on the same page.

All for now,
Marnie

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Sunday, June 6, 2021 16:08
To: Keller, Marnie N <mkeller@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

Thanks for the update. Super great to hear (b) (6) Personal Privacy Awesome!

Re NSO Happy to hear SR staff is able to help with NSO surveys. If you could somehow keep track of how much of that effort is being done by SR, I would appreciate it (e.g., number of SR folks/night and number of sites they are covering). Curious why 30 sites have second visits, but still needing first visits at other sites??

Were you counting on Erich's help this next week? He and Jason (I hope will be helping me with hab surveys on Thursday.. still need to confirm this with the guys).

So, what is your thought with my meeting with you all at this point? Since I am now updated on NSO, my other concern is eagle surveys. But I can just email the gang and have them send me an update on those instead of taking time away from field for a meeting. Now is the time to get fledgling counts. Should be relatively simple if the site was successful given that big ol' babies will be out and about. Would crew be able to get the west sites done prior to starting NSO surveys? Erich or I can cover the Rock Creek site. Darren has adopted the Swiftwater BAEA, so I get regular updates on that site. I know Erich did some west side GOEA and PEFA this past week.

All for now.

Thanks again,

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management Roseburg District Office
Phone: (541) 464 3381; egayner@blm.gov

From: Keller, Marnie N <mkeller@blm.gov>
Sent: Friday, June 4, 2021 04:51
To: Gayner, Elizabeth I <egayner@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: NSO survey status

My week has gotten away from me as well. I did get your text but I haven't had a minute to spare, so I apologize for not replying right away.

- We have about 16 more sites in Smith River and about 7 sites elsewhere still needing 1st visits.
- We've done about 30 second visits out of 154 sites needing them.
- We've done 3rd visits at East Elk.
- We have 2 pairs nesting at Melrose and Rookery.
- Two pairs not nesting at Western Cougar and Upper North Fork (just got this one tonight).

Jason called me a couple days ago to let me know that most of his crew is done with their second visits, so he can give us 2 folks to help next week with surveys and will also be able to give us some during the last week of June. He also came out with us to Smith River tonight to give us a hand and found the pair at Upper North Fork.

(b) (6) Personal Privacy [redacted]. I have to take him to a follow up Dr. appt tomorrow.

I will be working this weekend getting maps and info for Jason's crew to be able to assist us next week.

-Marnie

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Thursday, June 3, 2021 9:28
To: Keller, Marnie N <mkeller@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>
Subject: NSO survey status

Hey Marnie,

I got your text yesterday, but do not know if you received my response. I meant to ask you for an NSO survey status update last week, but the week got away from me. I am heading to field today and will not be available to talk or meet this afternoon. So, could you please send me a quick summary of NSO survey status to this point? My main concern is whether all first visits got done given down time for road clearing and weather and we are now into June. I have not had a chance to review the tracking table yet either.

I would like to try to meet with everyone in person next week... but do not know if doable given schedules being worked. Or we can just meet on teams? If you see a need to meet with me one on one, let me know and we can do that prior to meeting with the crew. I just need to know where we are at with everything. With June 1st flying by it is time to check eagle nests for teenagers.

Thank you,

Liz

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Outlook

Fw: TDSA Site Issues

From Showalter, Rachel M <rshowalt@blm.gov>
Date Wed 10/20/2021 2:43 PM
To Korn, Michael J <mkorn@blm.gov>
Cc Gayner, Elizabeth I <egayner@blm.gov>

Hey Mike -

This is an FYI regarding the quality of our NSO data from the crew this year. I will be working with Heather/Liz to come up with a way to approach Marnie to discuss. We are lucky to have Heather as our QC expert. Not sure why this was not caught before it got to Heather, bc from my understanding, there is a QC step (Marnie) in between the surveyor and Heather.

Also, in an effort to avoid similar issues next year, Liz, Heather and I have discussed that Heather and Jason will jointly train both crews (SR and SW) at the same time and set similar expectations, including data quality and timeliness. I have spoken with Jason and he is on-board. That should remedy this situation.

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, October 20, 2021 2:33 PM
To: Showalter, Rachel M <rshowalt@blm.gov>
Subject: Fw: TDSA Site Issues

The seventh NSO site that was out of protocol that Heather just came across today.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
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Phone: (541) 464-3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Wednesday, October 20, 2021 12:59
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

I just came across another site that is out of protocol beacause one survey was windy. Mill Creek MSNO 3098 alt O only has 2 complete night visits for 2021, the other had a windy weather code with comments about wind on 2 of the 3 call points for the site. Mill Creek is NOT in Blue and Gold. It is located along the eastern boundary of the TDSA, and is east of Hubbard Creek, between Hubbard Creek and the Umpqua River. This time it was Zanarini. I can't understand why these issues were not brought to our attention.

I hope this is the last,

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, October 19, 2021 8:44 AM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Cool.

Yes, I think the info you listed to provide some context and maybe an estimate in your mind of what it would take (number of surveyors) to complete the workload comfortably (e.g., no OT, assuming all stars align and barring any major obstacles/issues).

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Tuesday, October 19, 2021 08:37
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Sure I can meet on Friday. The morning would work best for me, I usually work a half day. Do I need to have some sort of analysis done for the meeting, like numbers of MSNO, TSNO and timber sale clearance that we currently survey at 3 visits vs what we would need to survey at 6 visits for timber sale clearance? Any other burning questions? I like to be prepared so I'm not wasting time trying to figure things out on the fly.

Thanks,

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, October 19, 2021 12:44 AM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Heather,

After talking with Rex, I decided not to talk with Mike about the Tyee stuff since he can tend to complicate matters more. But, I did talk with Rachel and she is interested in meeting. Are you available for an hour or two on Friday?? If so, when would work best for you?

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management - Roseburg District Office
Phone: (541) 464-3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Monday, October 18, 2021 07:47
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Sounds like a plan! I will keep you all posted if any other issues arise from the data.

Heather Wise

Heather R Wise
Wildlife Biologist
hwise@blm.gov
541-464-3253

From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Sunday, October 17, 2021 6:27 PM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Wow Heather. Thanks for the thorough rundown of 'hang-ups' with the SW NSO data. Disappointing to say the least. And again, this begs the question on whether we even keep up survey effort at this level given the issues. I go into the field tomorrow with Mike and I might get his take on it (without divulging the issues we are having on our end). Just want to see if he thinks it is beneficial from mgmt perspective or not at this point. I am on the fence about it. But we need to have the discussion soon... when you, Rex, Rachel, and I can meet.

Thanks again,

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist Swiftwater Field Office
OR/WA BLM Peregrine Falcon Technical Coordinator
Bureau of Land Management Roseburg District Office
Phone: (541) 464 3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Friday, October 15, 2021 10:01
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: TDSA Site Issues

Liz and Rex,

To date, I have proofed visit cards from A- L, with some hang-ups.

I was telling Rex at the gathering on Thursday, that I had just confirmed with Claire on Wednesday that she had 6 site visits where she used the W (windy) code for weather. I made sure that she knew that wind affects the surveyor's ability to detect owls. If wind affects coverage of the NRF habitat at the NSO site, then the site visit needs to be made up under better weather conditions. Claire agreed that she was aware of what windy means (wind speed wise and not meeting protocol) but did not indicate on the NSO tracking sheet or alert the crew lead or other crew members that she had site visits that were out of protocol. She stated that she flagged the sites with windy weather in her notebook and was going to survey them again, but after her accident she forgot that those sites needed an additional visit.

Additionally, I have become aware of some other issues with sites that caused them to be out of protocol.

Here is the list of sites that did not meet protocol:

1. **Andrews Creek TSNO RB 9069T -** Appeared to have 3 complete night visits but one was coded as windy and Claire did not complete the survey that night. Therefore, only 2 complete night visits for 2021 meet protocol. Site polygon does not meet protocol. Andrews Creek is not on the list for Blue and Gold EA sites but is very close and it may be an error that it was not included. Polygon is situated between Snail Canyon and EF Flagler. Looks like it should be part of Snail Canyon and not a separate site, but that's another rabbit hole.
2. **Callahan Ridge TSNO RB 9163T-** had 3 complete night visits, but one was coded as Windy weather therefore only 2 night visits for 2021 meet protocol. Site polygon does not meet protocol. Not in Blue and Gold EA area.
3. **Coos Bay Roadside MSNO 0559-** No surveys were conducted in 2021 due to confusion with Coos Bay District. It was thought that Coos Bay BLM was having surveys contracted for this site, but they did not. This site is within the TDSA but on Coos Bay BLM. Not in Blue and Gold EA area.
4. **Little Elk TSNO RB9055T -** had 3 complete night visits, but one was coded as Windy weather therefore only 2 night visits for 2021 meet protocol. Site polygon does not meet protocol. This polygon is between Hancock Creek TSNO and Bell Mountain MSNO. Not in Blue and Gold EA area.
5. **Panther Haney MSNO 1164 -** This site is located on the edge of the TDSA in the Smith River area. There were access issues with locked gates on private land and surveyors were unable to cover all NRF habitat in this site polygon. Only one partial visit was conducted.
6. **Haney Creek MSNO 2151 -** This site is located on the edge of the TDSA in the Smith River area. There were access issues with locked gates on private land and surveyors were unable to cover all NRF habitat in this site polygon. Three visits were conducted; however this is a large area and only a small portion of the NRF habitat was covered.

The following sites also had a Crawbuck visit with a windy code that no one knew about, but these have 3 complete night visits or greater because they are all within the Blue and Gold EA area and we did a 4th visit at those sites: **Green Ridge TSNO RB9073T, Little Canyon Creek MSNO 0272,** and **Lower Little Canyon MSNO 3267.**
So those three sites meet protocol for 2021.

Fun stuff!

Hopefully those are the only major issues that I run across. I have not completed NSO Summaries for these sites due to the NSO database being offline.

Please feel free to ask questions,

Heather Wise

Heather R Wise
Wildlife Biologist
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541-464-3253

Outlook

Re: TDSA Site Issues

From Showalter, Rachel M <rshowalt@blm.gov>
Date Fri 10/22/2021 4:14 PM
To Wise, Heather R <hwise@blm.gov>; Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>

A most excellent summary! Thank you Heather ! And to everyone for a very informative discussion this am!

Rachel Showalter
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From: Wise, Heather R <hwise@blm.gov>
Sent: Friday, October 22, 2021 2:40 PM
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>; Showalter, Rachel M <rshowalt@blm.gov>
Subject: Re: TDSA Site Issues

Great conversation about the NSO Swiftwater West-side I-5 Monitoring (SWIM), formerly known as the PNW- Tyee Density Study (TDSA), and SW NSO Timber Sale clearance surveys!

See how I'm pushing the new acronym .

I updated the excel tables that I showed you all and took TDSA out of the entire spreadsheet, using the new acronym. The first tab (NSO Project Workload Table) is what we talked about presenting to management. Erich was hiding in my pivot table, I found him smushed between rows, so his effort was there all along.

Below is the summary of the issues thus far with the SWIM survey effort in 2021. I really don't anticipate any additional issues with meeting protocol, but I'm not finished going through the data yet.

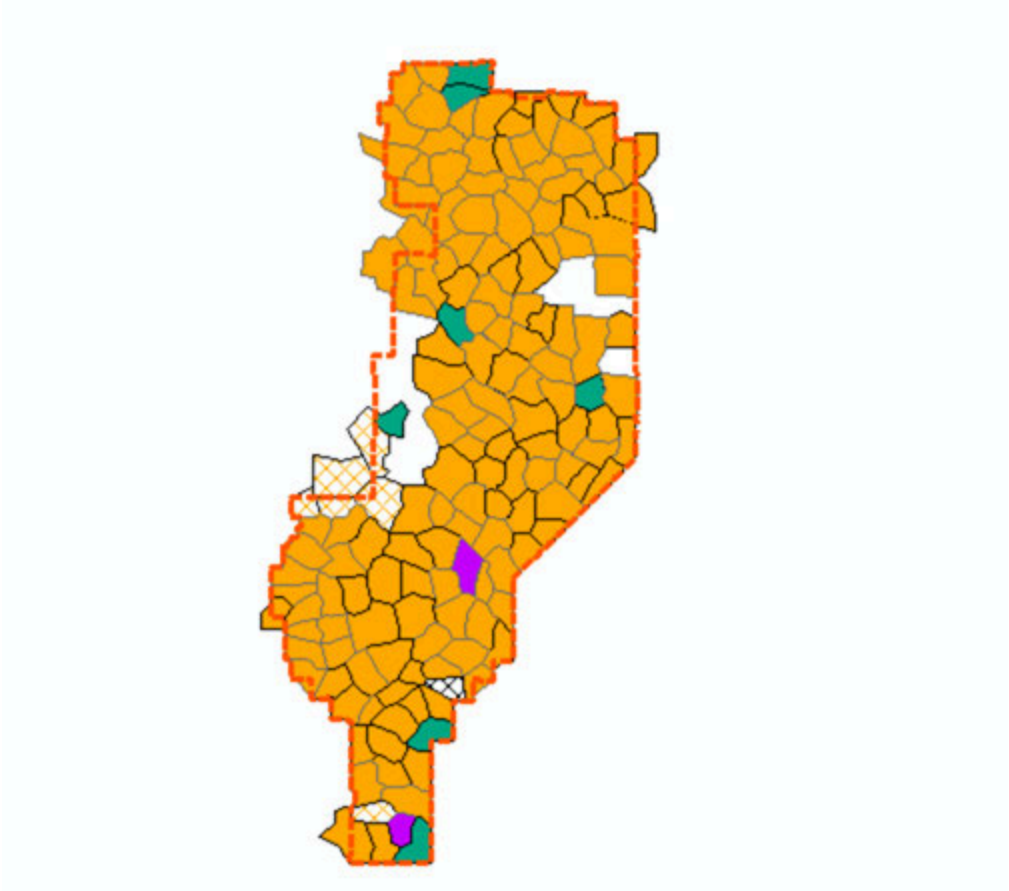
Here is the list of sites that did not meet protocol in 2021:

1. **Andrews Creek TSNO RB 9069T** - Appeared to have 3 complete night visits but one was coded as windy and Claire did not complete the survey that night. Therefore, only 2 complete night visits for 2021 meet protocol. Site polygon does not meet protocol. Andrews Creek is not on the list for Blue and Gold EA sites but is very close and it may be an error that it was not included. Polygon is

situated between Snail Canyon and EF Flagler. Looks like it should be part of Snail Canyon and not a separate site, but that's another rabbit hole.

2. **Callahan Ridge TSNO RB 9163T-** had 3 complete night visits, but one was coded as Windy weather therefore only 2 night visits for 2021 meet protocol. Site polygon does not meet protocol. Not in Blue and Gold EA area.
3. **Coos Bay Roadside MSNO 0559-** No surveys were conducted in 2021 due to confusion with Coos Bay District. It was thought that Coos Bay BLM was having surveys contracted for this site, but they did not. This site is within the TDSA but on Coos Bay BLM. Not in Blue and Gold EA area.
4. **Little Elk TSNO RB9055T -** had 3 complete night visits, but one was coded as Windy weather therefore only 2 night visits for 2021 meet protocol. Site polygon does not meet protocol. This polygon is between Hancock Creek TSNO and Bell Mountain MSNO. Not in Blue and Gold EA area.
5. **Panther Haney MSNO 1164 -** This site is located on the edge of the TDSA in the Smith River area. There were access issues with locked gates on private land and surveyors were unable to cover all NRF habitat in this site polygon. Only one partial visit was conducted. Not in a timber sale area.
6. **Haney Creek MSNO 2151 -** This site is located on the edge of the TDSA in the Smith River area. There were access issues with locked gates on private land and surveyors were unable to cover all NRF habitat in this site polygon. Three visits were conducted; however this is a large area and only a small portion of the NRF habitat was covered. Not in a timber sale area.
7. **Mill Creek MSNO 3098** - This site is located along the eastern boundary of the TDSA, and is east of Hubbard Creek, between Hubbard Creek and the Umpqua River. This site had 3 complete night visits, but one was coded as Windy weather therefore only 2 night visits for 2021 meet protocol. Site polygon does not meet protocol. Not in Blue and Gold EA area.

Map of NSO SWIM Area: Orange = Surveyed to 3-visit Protocol
Orange Hatch= Surveyed to 6-visit protocol by contractor
Teal Green= Sites listed above Out of Protocol
Purple= NSO nests 2021 (2)
White areas are private lands never included in TDSA



Let me know if you all need any other facts and figures.

Have a good weekend,
Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, October 20, 2021 3:23 PM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Her reason for not addressing the wind issue is absolute b.s. Arghhhhh.

Weather excerpts from the NSO Survey Protocols...

1995 protocol (used in TSDA), page 3
Do not survey under inclement weather conditions, such as high winds (> 10 mph) rain, or high noise levels
(stream noise, machinery, etc.) which would prevent you from hearing a response that would be heard under

better conditions.

2012 protocol, (used outside study areas), page 12
Acceptable Weather Conditions. Do not survey under inclement weather conditions, such as high wind speed (e.g. > 15 mph), rain, heavy fog, or at high noise levels which would prevent hearing of responses (e.g., stream noise, continuous tree drip after a rain event, machine noise, etc.). If weather conditions or noise levels are in doubt, be conservative. Consider placing call stations away from streams to reduce noise interference. Surveys conducted under marginal conditions will reduce quality of the overall survey effort. Negative results collected under inclement weather conditions may not be adequate for evaluating spotted owl presence/absence. Generally, surveys should be conducted under conditions described as a gentle breeze (wind speed 8 11 mph, or less. Under such conditions, flags may extend, and leaves move. As wind levels reach >12mph (small branches move, dust begins to blow) conditions are not acceptable as background sound level substantially reduces ability of the owl to hear the caller, and vice versa. For additional information, see: http://www.unc.edu/~rowlett/units/scales/beaufort.html.

Liz

Elizabeth I. Gayner
Lead Wildlife Biologist - Swiftwater Field Office
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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, October 20, 2021 15:11
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Wow. Weather, wind, etc., is in the protocol. Always been the case. Why would this be different than the other protocol?? I am beyond frustrated. Rex and Rachel predicted she would blame me.

Liz

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Lead Wildlife Biologist Swiftwater Field Office
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Phone: (541) 464 3381; egayner@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Wednesday, October 20, 2021 14:57
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Liz,

I talked to Marnie about the wind issues. I think it wasn't stressed that it is important to notify the crew and crew leader when surveys need made up because of bad weather. It seems like a no brainer to me, since I've done MAMU work and am aware of weather issues affecting surveys.

Hopefully Jason and I can do a comprehensive training/ re-training of all the NSO surveyors as a group so these issues don't arise.

I feel really bad for not double checking on this sort of thing, but I was trying not to step on toes with crew lead stuff. Plus, the seasonals did not notify anyone or highlight the windy weather out on the tracking sheet.

Very frustrating, but a lesson learned.

Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Wednesday, October 20, 2021 2:14 PM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Uuuuuuugh! So, it just dawned on me and another disturbing issue I see, is that if you were not going through this data with a fine-tooth comb, we would assume all these sites met protocol. These issues should have been caught when individuals were QC'ing and entering data into the database. No one else caught these!?! WTH?!?

The evening/night wind is why Janice had her crew do surveys in the early morning into the dawn hours for so many years. She said it was a pain needing to reschedule make ups.

Well, thanks for your AWESOME EFFORTS catching this stuff Heather. I am at loss of words at this point. This kind of work is unacceptable and will certainly need to be addressed further next year. Have you talked to Marnie about this???

Liz

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From: Wise, Heather R <hwise@blm.gov>
Sent: Wednesday, October 20, 2021 12:59
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

I just came across another site that is out of protocol beacause one survey was windy. Mill Creek MSNO 3098 alt O only has 2 complete night visits for 2021, the other had a windy weather code with comments about wind on 2 of the 3 call points for the site. Mill Creek is NOT in Blue and Gold. It is located along the eastern boundary of the TDSA, and is east of Hubbard Creek, between Hubbard Creek and the Umpqua River. This time it was Zanarini. I can't understand why these issues were not brought to our attention.

I hope this is the last,

Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, October 19, 2021 8:44 AM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Cool.

Yes, I think the info you listed to provide some context and maybe an estimate in your mind of what it would take (number of surveyors) to complete the workload comfortably (e.g., no OT, assuming all stars align and barring any major obstacles/issues).

Liz

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From: Wise, Heather R <hwise@blm.gov>
Sent: Tuesday, October 19, 2021 08:37
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Sure I can meet on Friday. The morning would work best for me, I usually work a half day. Do I need to have some sort of analysis done for the meeting, like numbers of MSNO, TSNO and timber sale clearance

that we currently survey at 3 visits vs what we would need to survey at 6 visits for timber sale clearance? Any other burning questions? I like to be prepared so I'm not wasting time trying to figure things out on the fly.

Thanks,

Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, October 19, 2021 12:44 AM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Heather,

After talking with Rex, I decided not to talk with Mike about the Tyee stuff since he can tend to complicate matters more. But, I did talk with Rachel and she is interested in meeting. Are you available for an hour or two on Friday?? If so, when would work best for you?

Liz

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From: Wise, Heather R <hwise@blm.gov>
Sent: Monday, October 18, 2021 07:47
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Sounds like a plan! I will keep you all posted if any other issues arise from the data.

Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Sunday, October 17, 2021 6:27 PM
To: Wise, Heather R <hwise@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: Re: TDSA Site Issues

Wow Heather. Thanks for the thorough rundown of 'hang ups' with the SW NSO data. Disappointing to say the least. And again, this begs the question on whether we even keep up survey effort at this level given the issues. I go into the field tomorrow with Mike and I might get his take on it (without divulging the issues we are having on our end). Just want to see if he thinks it is beneficial from mgmt perspective or not at this point. I am on the fence about it. But we need to have the discussion soon... when you, Rex, Rachel, and I can meet.

Thanks again,

Liz

Elizabeth I. Gayner

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From: Wise, Heather R <hwise@blm.gov>
Sent: Friday, October 15, 2021 10:01
To: Gayner, Elizabeth I <egayner@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>
Subject: TDSA Site Issues

Liz and Rex,

To date, I have proofed visit cards from A- L, with some hang-ups.

I was telling Rex at the gathering on Thursday, that I had just confirmed with Claire on Wednesday that she had 6 site visits where she used the W (windy) code for weather. I made sure that she knew that wind affects the surveyor's ability to detect owls. If wind affects coverage of the NRF habitat at the NSO site, then the site visit needs to be made up under better weather conditions. Claire agreed that she was aware of what windy means (wind speed wise and not meeting protocol) but did not indicate on the NSO tracking sheet or alert the crew lead or other crew members that she had site visits that were out of protocol. She stated that she flagged the sites with windy weather in her notebook and was going to survey them again, but after her accident she forgot that those sites needed an additional visit.

Additionally, I have become aware of some other issues with sites that caused them to be out of protocol.

Here is the list of sites that did not meet protocol:

1. **Andrews Creek TSNO RB 9069T -** Appeared to have 3 complete night visits but one was coded as windy and Claire did not complete the survey that night. Therefore, only 2 complete night visits for

2021 meet protocol. Site polygon does not meet protocol. Andrews Creek is not on the list for Blue and Gold EA sites but is very close and it may be an error that it was not included. Polygon is situated between Snail Canyon and EF Flagler. Looks like it should be part of Snail Canyon and not a separate site, but that's another rabbit hole.

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6. **Haney Creek MSNO 2151 -** This site is located on the edge of the TDSA in the Smith River area. There were access issues with locked gates on private land and surveyors were unable to cover all NRF habitat in this site polygon. Three visits were conducted; however this is a large area and only a small portion of the NRF habitat was covered.

The following sites also had a Crawbuck visit with a windy code that no one knew about, but these have 3 complete night visits or greater because they are all within the Blue and Gold EA area and we did a 4th visit at those sites: **Green Ridge TSNO RB9073T, Little Canyon Creek MSNO 0272,** and **Lower Little Canyon MSNO 3267.**
So those three sites meet protocol for 2021.

Fun stuff!

Hopefully those are the only major issues that I run across. I have not completed NSO Summaries for these sites due to the NSO database being offline.

Please feel free to ask questions,

Heather Wise

Heather R Wise
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Outlook

Fw: 2021 PNW ARU Prelim Results and 2022 Blue & Gold NSO Surveys

From Showalter, Rachel M <rshowalt@blm.gov>
Date Tue 6/13/2023 1:53 PM
To Korn, Michael J <mkorn@blm.gov>

1 attachment (623 KB)
NSO_B&G_ARU_2021Results&2022Direction_hwise03152022.pdf;

FYI

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541.841.2239 (work cell)
rshowalt@blm.gov

From: Wise, Heather R <hwise@blm.gov>
Sent: Tuesday, March 15, 2022 2:00 PM
To: Gayner, Elizabeth I <egayner@blm.gov>; Keller, Marnie N <mkeller@blm.gov>; Reeder, Erich M <ereeder@blm.gov>; Bright, Cindy K <ckbright@blm.gov>; Whitt, Jordan C <jcwhitt@blm.gov>; Vaca, Veronica M <vvaca@blm.gov>; Bullard, Billy L <bbullard@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>
Subject: Re: 2021 PNW ARU Prelim Results and 2022 Blue & Gold NSO Surveys

I went through the maps that Liz provided and added the indicated call points to the *TSA_Callpoints_2022_edit* feature class. Jordan is in the process of updating the NSO Survey TPKs with the updated call point feature. It now also includes the points we added in the B&G Bonus sections. Plus there is a trails feature. So Jordan, you can delete the *Blue_Gold_CallPoints_Add_2022* feature, bc it is now included in the other one.

Click on the sticky notes in the attached .pdf for notes regarding the sites and call point numbers.

Also keep in mind that for some reason PNW re-numbered the hexagons for the ARU study, therefore they do not match the BSNO that we use for our STVA cards and database. I was confused and had to figure it out.

Feel free to ask questions,

Heather Wise

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From: Gayner, Elizabeth I <egayner@blm.gov>
Sent: Tuesday, March 15, 2022 10:48 AM
To: Keller, Marnie N <mkeller@blm.gov>; Wise, Heather R <hwise@blm.gov>; Reeder, Erich M <ereeder@blm.gov>; Bright, Cindy K <ckbright@blm.gov>; Whitt, Jordan C <jcwhitt@blm.gov>; Vaca, Veronica M <vvaca@blm.gov>; Bullard, Billy L <bbullard@blm.gov>
Cc: Showalter, Rachel M <rshowalt@blm.gov>; McGraw, Rex L <rmcgraw@blm.gov>; Espinosa, Rolando H <respinos@blm.gov>
Subject: 2021 PNW ARU Prelim Results and 2022 Blue & Gold NSO Surveys

Hey Gang,

Attached are the preliminary results from the PNW ARU surveys in Blue and Gold and my direction on tackling survey effort in the hexagons that had detections. There are four sites that will take some extra effort for set-up and surveys. I know that survey areas have been assigned, but I want everybody to be in the loop because surveys in this area are our highest priority and will most likely involve everyone on the crew at some point.

We received the ARU detection information from PNW late last week. We are still trying to get more detailed information. But given how long it took to get this much from PNW, we are going to use what we have thus far instead of waiting further. If we get additional information in the near future (e.g., which specific ARUs recorded NSO), I will let you all know. In the meantime we will proceed with the direction I have outlined in the attached document. This morning, DLT was briefed on the information we received from PNW and on how we are going to approach the 2022 survey effort using the 2021 ARU information.

Please direct any questions or concerns to Heather, and she and I will work through them. We can also discuss as group before or after NSO training this next Monday if needed.

Thank you,

Liz

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Preliminary NSO Survey Results from PNW ARUs in 2021 and Direction for 2022 Broadcast Calling Survey Effort

The following is a summary of results from PNW's ARU surveys completed in 2021. Based on these results, direction has been provided for completing surveys within areas of detections in 2022.

2021: Preliminary NSO ("STOC") detections for hexes in the Tyee Survey Area (TSA) associated within the Blue & Gold project area.

- Hexes 18734 and 18730 had no verified STOC detections.
- Hexes 18541, 18828, 18928, and 18926 have verified STOC detections (Figures 1-4).
- ARU STOC detections have not been processed through a sex predictor model, so we don't have that specific information at this time.
- The KNOWN SURVEY column is whether callback survey information was documented
- The SUSPECTED SURVEY column is for validating a heard a callback survey, but PNW doesn't have confirmed information that a survey was conducted.
- The same hexes will be sampled every year.
- Note: there were no MAMU detections for the 6 hexagons in the project area.

Table 1. PNW Hexagons with NSO Detections in the Blue & Gold Project Area.

HEX	DATE	AREA	STOC	STOC_IRREG	BARK	MAMU	KNOWN SURV	SUSPECTED SURV
18541	3/9/2021	TYE	3	0	0	0	N	
18541	3/10/2021	TYE	8	0	0	0	N	
18541	3/11/2021	TYE	21	3	0	0	N	Y - 1915
18541	3/21/2021	TYE	1	0	0	0	N	
18828	3/31/2021	TYE	2	0	0	0	Y	
18928	6/14/2021	TYE	3	0	0	0	Y	
18926	6/14/2021	TYE	2	0	0	0	N	
18926	6/15/2021	TYE	1	0	0	0	N	
18926	6/16/2021	TYE	4	0	0	0	Y	

2022: At this time, we do not know which ARU locations recorded STOC detections which makes it challenging with knowing where to proceed with core walks and managing sites. ARUs were placed in NRF and dispersal-only habitats. We are working on obtaining more detailed information from PNW. However, it is not guaranteed we will receive the information in a timely manner. Therefore, efforts to locate birds on the ground to determine an activity center will be based on ARUs that were in NRF habitat.

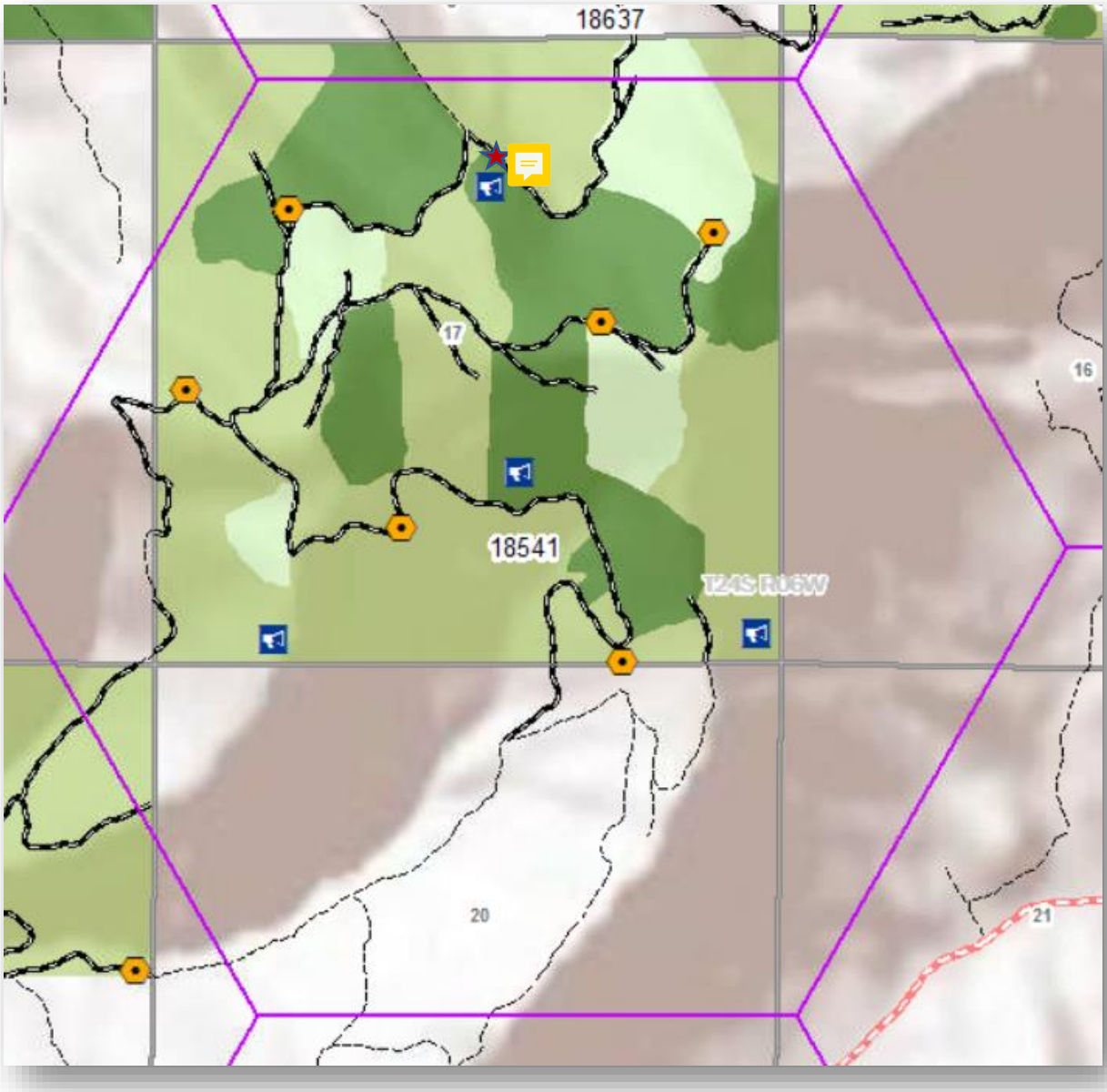
Direction for completing surveys in hexagons that had STOC detections in 2021:

- **Conduct at least one "core walk" in areas where an ARU is in NRF**. Blue (megaphone) icons in **Figures 1-4** indicate approximate ARU deployment locations by PNW.
    - **Additional note for all survey effort throughout the TSA**… based on recent discussion with the PNW biologist who led the study effort for 30+ years in the TSA: Most STOC in TSA are accustomed to surveyors and mousing. But given presence of barred owls, STOC are not keen on being vocal. **During core walks… regularly stop,**

look up and scan the trees for a silent STOC that has flown in. Squeaking like a mouse can be effective for calling in a STOC. In addition, up until the last couple of years of survey effort (prior to changing to ARU monitoring), surveys and core walks were primarily conducted in the morning. If you don't get detections in afternoon/evening, she strongly encourages surveying in the morning.

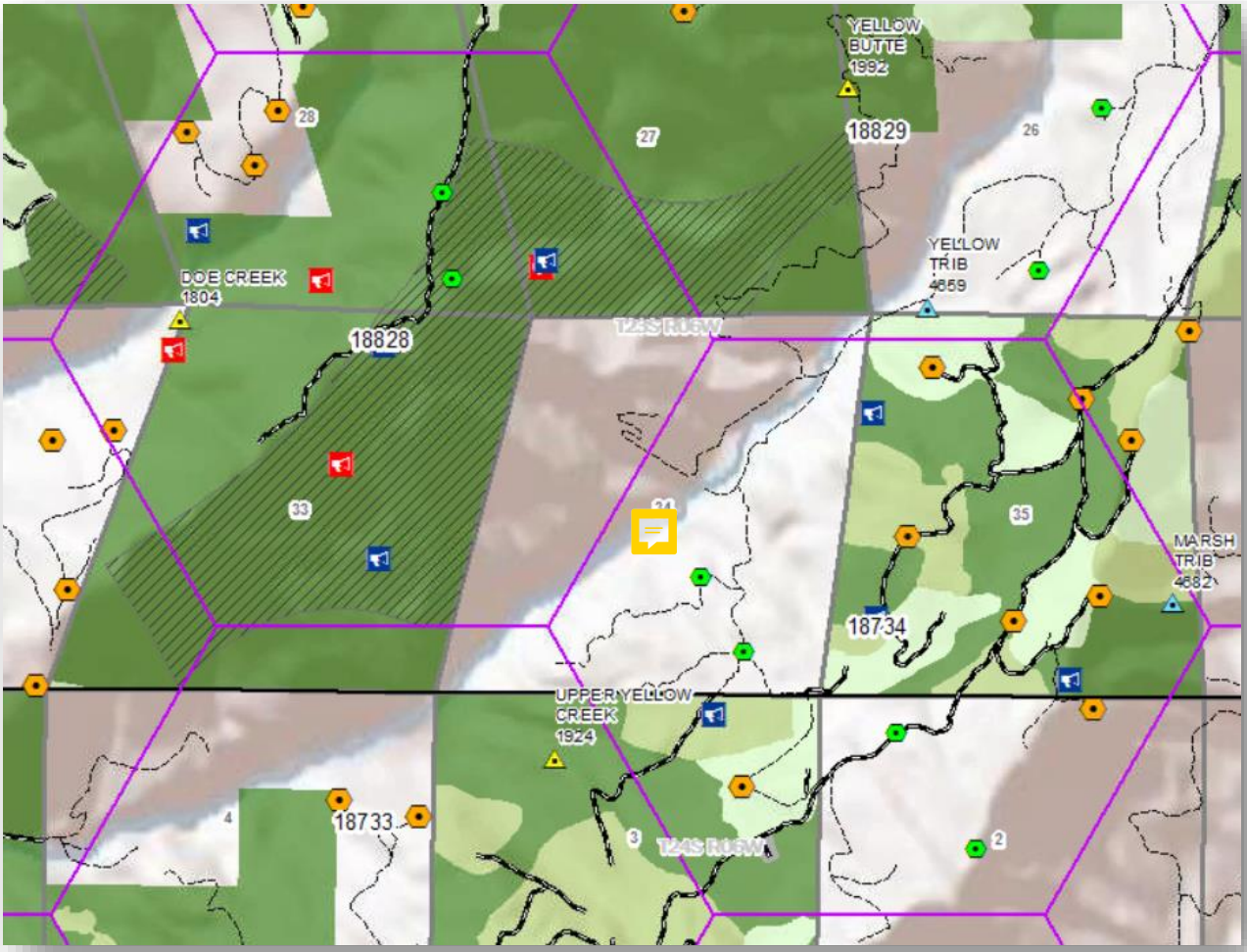
- **Hexagon 18541 — to ensure adequate survey coverage, add a call station near ARU to the north.** Current call stations (indicated with ⬢) are approximately 0.3 miles from ARU location. Red star indicates suggestion for station placement (**Figure 1**).

Figure 1: Hexagon 18541 (detections on four nights 3/9-11 and 3/21= occupied)



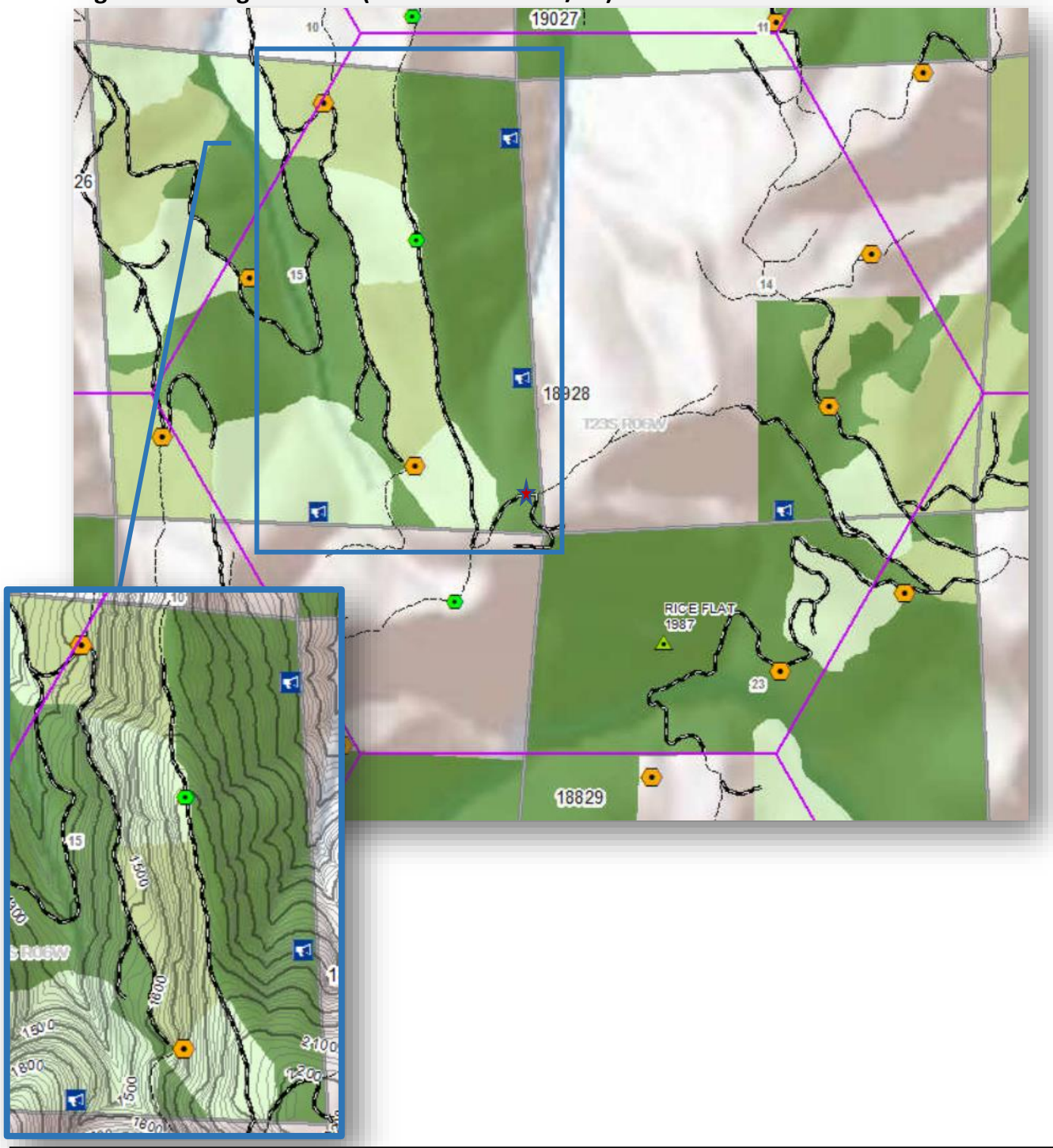
- **Hexagon 18828 — adding stations is already in progress to obtain adequate survey coverage of habitat indicated in cross hatch in Figure 2.**
    - Based on review of BLM ARU 2021 data (red megaphone icons in **Figure 2**), there is at least one barred owl pair. No STOC detections thus far. BLM data is still being reviewed and therefore, more details will be provided in near future.

Figure 2: Hexagon 18828 (2 detections on 3/31) and Hexagon 18734 (no detections)



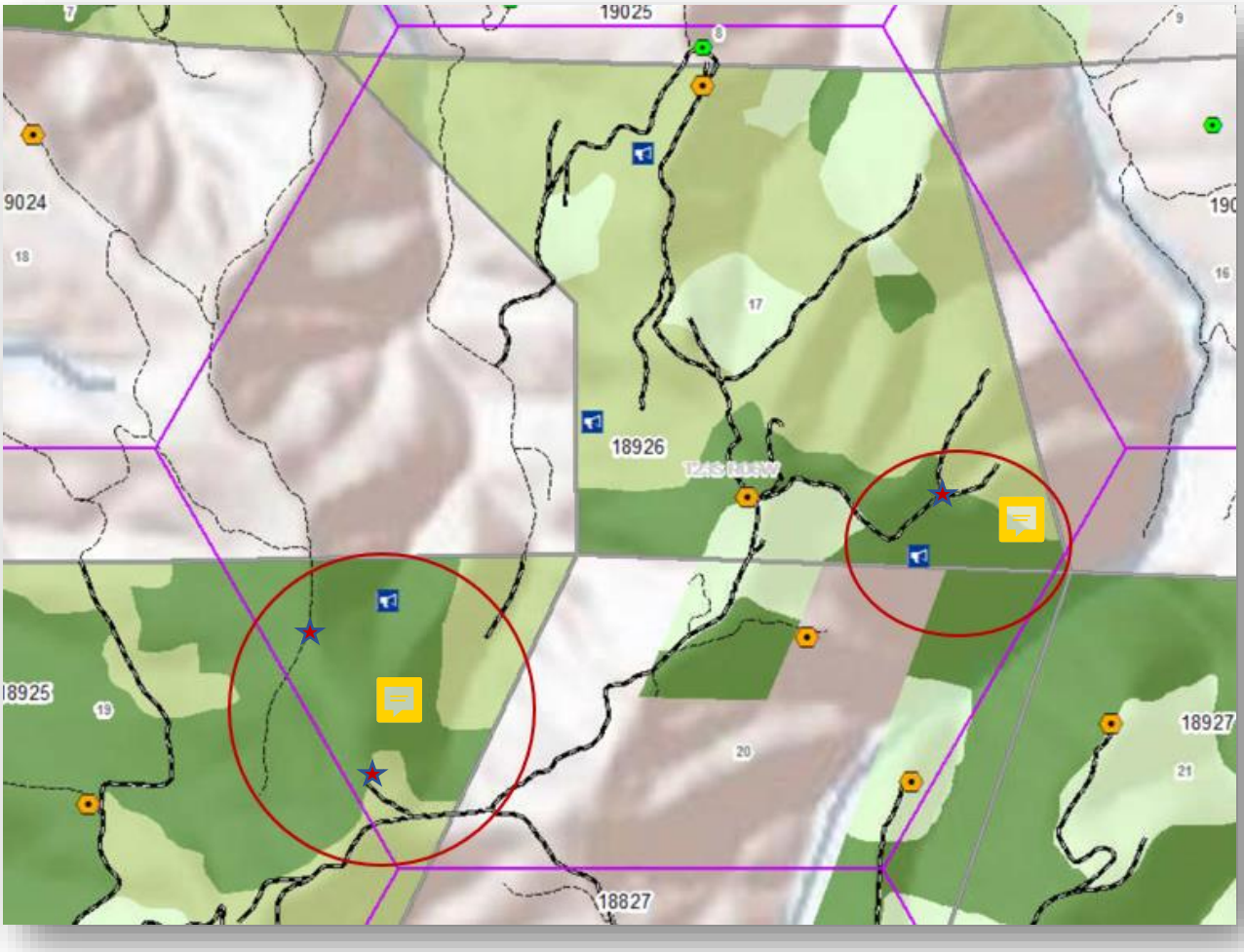
- **Hexagon 18928 — to ensure adequate survey coverage, re-establish call point 1980-03 (indicated with on road bordering western edge of NRF) and add a call station near ARU in SE corner of section** (**Figure 3**). Survey stations to west likely not adequately surveying habitat east of ridgeline where ARUs are located along east boundary of section 15 (refer to contours in additional figure below). Addition of two stations would provide survey coverage of habitat east of ridgeline. If roads are not accessible, will need to determine a walk-in call point or two to adequately survey habitat.

Figure 3: Hexagon 18928 (3 detections on 6/14)



- **Hexagon 18926 — will need at least three stations added to adequately cover habitat** indicated in red oval polygons in **Figure 4**. The closest call stations currently established are more than 0.6 – 0.8 miles from habitat (including the ARU) located in the NE corner of section 19). In addition, based on the GIS Lidar topography, the habitat in the NE corner of section 19 (including the ARU) appears to be in a drainage between two ridgelines. Therefore, the established stations do not adequately cover the habitat per protocol. Red stars indicate suggestions for station placement. If roads are not accessible, will need to determine a walk-in call point along the ridge to access NE corner of Section 19 (**Figure 4**).

Figure 4: Hexagon 18926 (detections on 3 nights 6/14-16)



Kufta-Christie, Lindsey A

From: Kufta-Christie, Lindsey A
Sent: Tuesday, December 5, 2023 4:36 PM
To: Espinosa, Rolando H
Cc: Gayner, Elizabeth I
Subject: Possible STOC/SURV1 detections in Yellow Butte

Hello again Roli,

I have been reviewing and re-reviewing 2023 recordings, cross-referencing our survey efforts, and listening to the 'scripts' of the FoxPro recordings namely: 000 NSO_10min_USFWS, 001 & Fukudas_funky_mix to ensure whether or not the detections are true owl vocalizations or recordings. Here is a list of compiled information:

Here are potential STOC/SURV1 (NSOsurveys). These recordings from the ARU were picked up the same date and roughly MM:HH as the scripts were broadcasted by the owl crew:

YEB-4 SURV1? vocalization consisting of three audible 3-note calls followed by roughly two minutes of no audible vocalizations, and then three groupings of faint BARKS (survey performed that night at STA 9069-10, survey time 2236-2246 by M.Wind). Please see email forwarded to you with correspondence between myself and MW.

YEC-3 SURV1? 8/3 at 2134 possibly Snail Canyon survey (JMowdy, Snail Canyon survey data card reads 2133-2143);
SURV1? 7/27 @ 2242 (JMowdy, HMarshall Yellow Martin survey data card reads 2040-2050)
These recordings from YEC-3 consists of three audible 3-note calls
Not sure whether J.Mowdy uses a hoot flute or recordings, all 3-note calls were very consistent.

This excel data sheet is located at: (b) (5) Government Commercial Information . Please select the "Copy" version with my initials attached to the end.

I need to look at the stations distance from the ARU location. Also location of ARU are in the "2023 ARU fixed loc" tab

Talk to you soon,
Lindsey

Kufta-Christie, Lindsey A

From: Kufta-Christie, Lindsey A
Sent: Tuesday, January 30, 2024 12:20 PM
To: Gayner, Elizabeth I
Subject: Comparison of actual SURV1 footage and questionable STOC? detection in YEC 3
Attachments: BLM_YEC-1_20230727_224202_2of2three&four-note.jpg; BLM_YEC-3_20230727_224202_surv1stoc_2of2three-note.jpg; BLM_YEC-2_20230727_224202_2of2_three&four-note_surv1.jpg

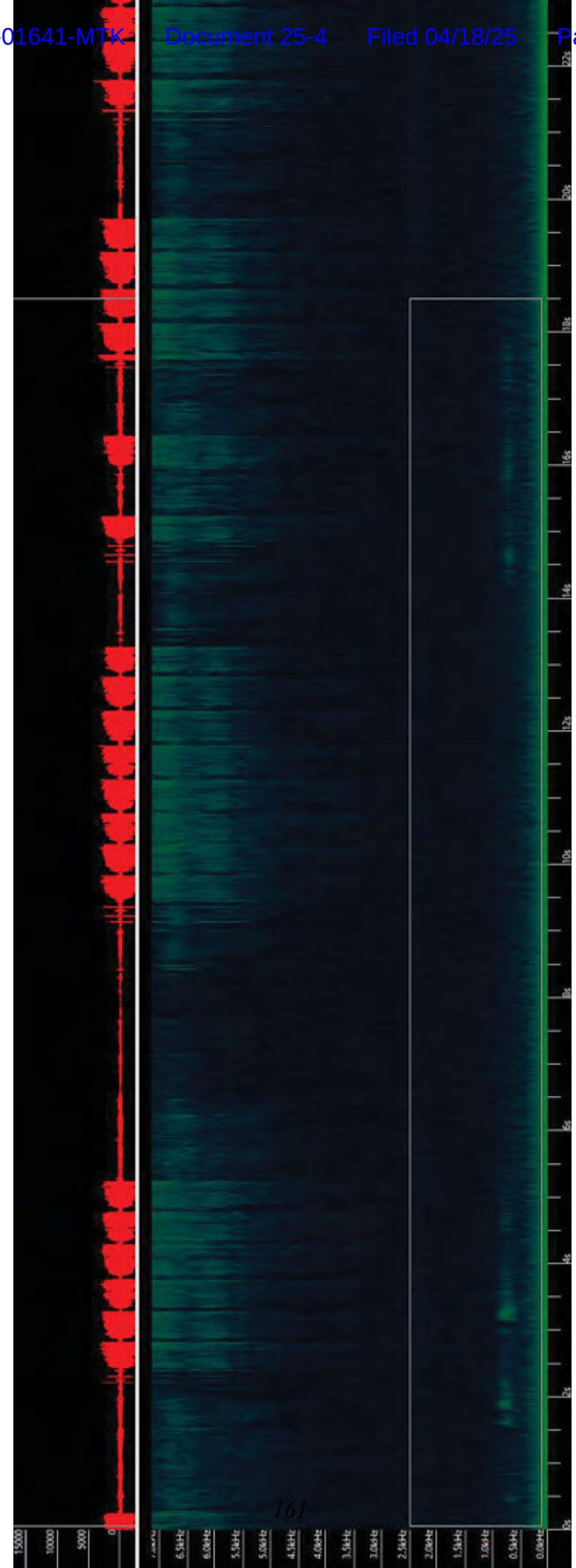
Hi Liz,

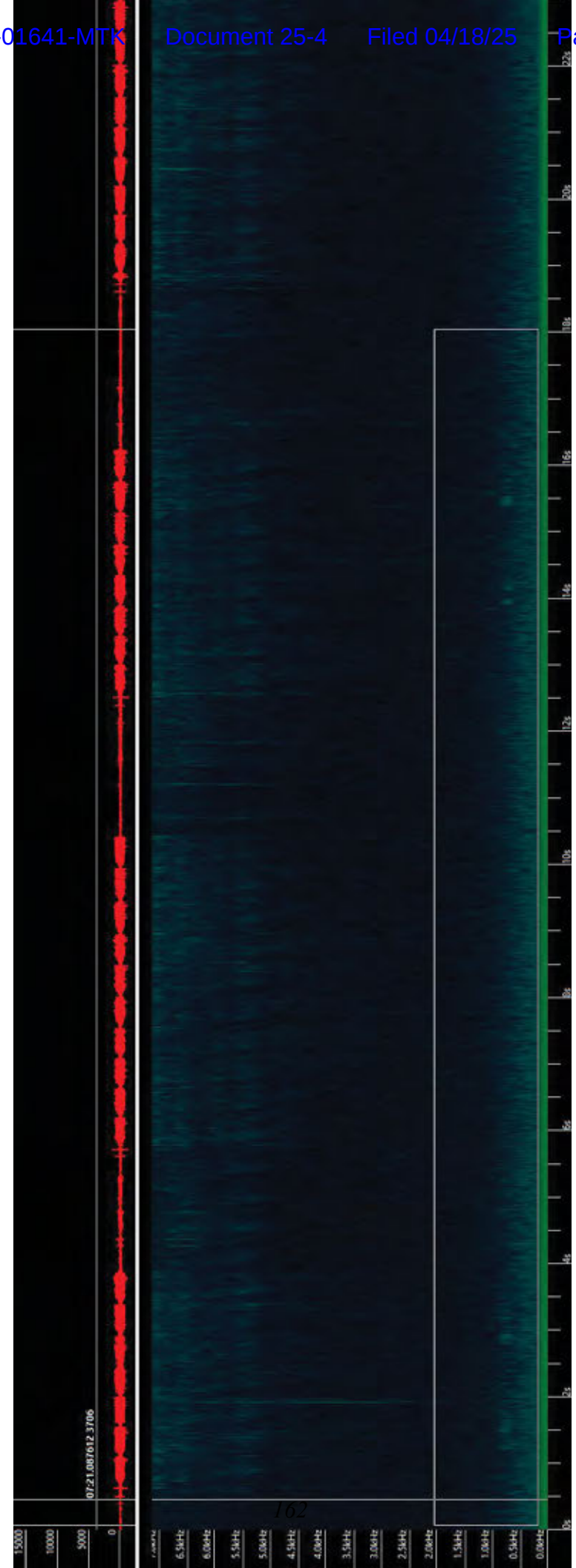
Follow the thread to the survey slides I pulled for comparison, or see the attached photos. I looked at SURV1 recording from YEC-1, -2 7/27 (additional SURV1 can also be found in YEC-3) and there is some difference, perhaps echo or wind that clouds the visual. Also in the folder is the recording of the SURV1/STOC? detection we are working through for the report. If you measure the time on the 'x-axis' it suggests the ARU recording on 7/27 is a survey from Bear Creek picked up on the Yellow Creek ARU station #1,2&3. There may have been some element of rearranging the script with individual calls being played at the surveyors liking OR human error on recording a time later than when the surveyor played the callbox, but that is an assumption and not known.

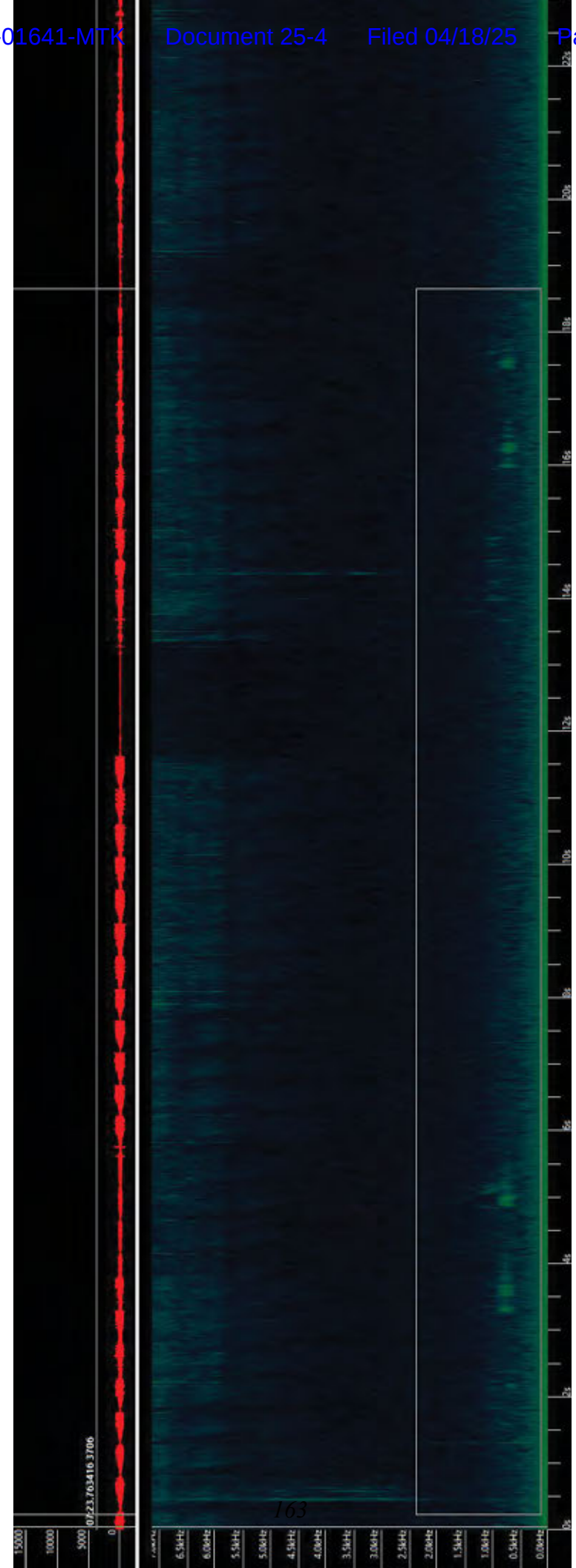
(b) (5) Government Commercial Information

The next step in the process is, year after year, noting what stations are heard on the ARU repeatedly and noting the influence of weather, the noise volume the call-box is played at, whether or not the station requires the surveyor to direct the calls in all four cardinal directions to cover are area, etc. I realize some of these details are already recorded on the data card, but some are not and it can be emphasized throughout the season so people are aware of the intricacies and inner-workings of the ARU. Wow! This whole process is exciting! I am hoping we can find some other call-box inaccessible "holes" to fill with ARU's in the future and find more actual vocalizations.

Lindsey




07:21.087612 3706



Kufta-Christie, Lindsey A

From: Reeder, Erich M
Sent: Wednesday, January 31, 2024 6:18 PM
To: Kufta-Christie, Lindsey A
Subject: RE: Cross-referencing call-back surveys and ARU recordings

Thank you for asking me to help, hopefully I can :0)

To begin with your last point, it may come as a shock to you but I don't think there is a geodatabase with any of our ARU station locations! I just kept the coordinates on the tracking sheet and manually entered x,y onto Arcmap to map them.

As to confirmation for June14, 2023, I will have to check on that tomorrow morning as it's time for me to walk away from this computer for today.

I hope you have another wonderful night with or without the wind!
E

From: Kufta-Christie, Lindsey A <lkuftachristie@blm.gov>
Sent: Wednesday, January 31, 2024 2:36 PM
To: Reeder, Erich M <ereeder@blm.gov>
Subject: Cross-referencing call-back surveys and ARU recordings

Thank you Erich for the help. This is what needs to happen. DOE-7 (coordinates 467626 4820705) ARU picked up vocalizations. Please confirm on the date 6/14/2023 at 2056 there were NO surveys or night core walks.
I have looked at the following 2023 survey effort data card records: Yellow Butte starts at 2136, Upper Little Canyon starts at 0009, Yellow Trib starts at 2240, McGee Creek starts at 2239… is there something I missed?

Thank you, thank you, thank you :)
Lindsey

(b) (5) Government Commercial Information [redacted]

Lastly, where is the B&G ARU geodatabase with all the locations of YEB, YEC, UYC, DOE, LYC etc.

Kufta-Christie, Lindsey A

From: Kufta-Christie, Lindsey A
Sent: Thursday, February 22, 2024 1:15 PM
To: Mowdy, Jason S
Subject: 2022-2023 ARU detections, in progress
Attachments: 22_23_NSOdetection_timelinePERstation.docx

Hi Jason,

Here is an update on the ARU detections—still working on Yellow Creek 2022 and 2023.

I am curious, was there a point on your map where Bright picked up a bird on 4/14/2022 in Yellow Creek? Thought I may have remembered that from our meeting on Wednesday.

Will continue digging and working on the document,
Lindsey

2022-2023 NSO Recordings (Survey and STOC)

All times mark the beginning of the individuals 'grouped' vocalizations unless noted otherwise

Upper Yellow Creek ARU #1 & 3 Surveys 3/16/2022

UYC-1	SURV	Reeder, 1924-12, 2057-2108, 1.07miles Was he playing the recording? Keller, 1924-04, 2107-2117, questionable, 1.72miles, also not picked up at UYC-3 which is closer.
	BUVI at:	19hr 31min 49sec
	Male 4-note at:	20hr 56min 00sec
	Male two series to a 2-note at:	20hr 56min 11sec
	Male one 4-note at:	20hr 56min 36sec
	Male three irregular call/series? to a 2-note at:	20hr 56min 36sec
	Male one 4-note at:	21hr 01min 12sec
	Male two series at:	21hr 01min 20sec
	Male one 4-note at:	21hr 01min 46sec
	Female four ¾-notes at:	21hr 03min 22sec
	Male three ¾-notes	21hr 04min 08sec
	STVA 8-note at:	21hr 04min 43sec
	Whistle seven + 4-barks at:	21hr 05min 49sec
UYC-3	walk-in SURV	Reeder, 1924-12, 1.22miles Bright, 1992-06, 1920-1930, 1.39miles
	BUVI at:	19hr 19min 09sec
	ER one 4-note at:	19hr 21min 30sec
	ER 4-note at:	20hr 00min 59sec
	ER two 4-notes at:	20hr 03min 17sec, 40sec
	ER random hoots:	20hr 05min 58sec
	ER 4-note:	20hr 07min 38sec

Reeder hikes to station 1924-12 (no times recorded but from Kellers start time at station 1924-08 at 2005, assume she drops Reeder off at 1800/1830 (see DOC-5) 1900 and he starts hooting on his way in. Survey at station 1924-12 is from 2057-2108. Reeder walks from 1924-12 to 1804-02, presumably does NOT call post survey from 2108 to 2156. Surveys 1804-02 from 2156-2206, hears whistles (repeated six times), estimates detection point at: 10 N 465613 4818859 from station 1804-02 (azimuth of 171degrees at ~100m), hikes into stand crashes and "left stand" at 2236. UYC-3 to 1804-02 is 0.91miles. Keller surveys station

1924-06 from 2158-2208. Distance from 1924-06 Keller to 1804-02 Reeder is 1.07miles. He could have heard the seven whistles in the recording of Kellers survey. Was there a radio check-in?

UYC-3	SURV	Keller 1924-03, 21:28-21:38, 0.49 miles and 1924-06, 21:58-22:08, 0.73 miles
	Female four 3-notes at:	21hr 33min 11sec
	7 whistles and 6 barks at:	21hr 35min 38sec
	Ends at:	21hr 36min 32sec
	SURV	SURVEYOR
	Female four 3-notes at:	22hr 06min 03sec
	7 whistles at:	22hr 08min 30sec
	5 barks (very faint) ends at:	22hr 09min 23sec

UYC-4	walk-in SURV	Reeder walk-in to 1924-12, 1.12miles
	ER one 4-note at:	19hr 21min 26sec
	(Document faint, moderate, distant "qualifier")	

Doe Creek ARU #5 detections (ARU deployed 3/3/2022) 3/16/2022

DOC-5	walk-in SURV	Reeder walk-in detected by UYC-3 & -4 1921 and 2000 hour, no data card
	ER two 4-notes at:	18hr 33min 01sec**
	ER one 4-note at:	18hr 34min 31sec
	ER one 4-notes at:	18hr 35min 56sec
	ER one 4-note at:	18hr 37min 08sec
	ER one 4-note at:	18hr 43min 13sec
	ER two 4-notes at:	18hr 46min 51sec

Yellow Trib ARU #3 detections 3/16/2022

YET-3	walk-in SURV	Keller, 1992-07, (1730-1930), 0.95mi
	Female four 3-notes at:	18hr 29min 26sec

Yellow Butte ARU #1 detections 4/27/2022

YEB-1	SURV	Wise, Gayner, entire survey: 1900-0022
	Male two 3-notes at:	20hr 50min 27sec, 50min 44sec
	Female? four 3-notes at:	20hr 52min 58sec, 53min 15sec, 31sec, 44sec (mod-faint vocalizations)
		Wise, Gayner, 2050-2100, 1992-04, 0.73miles

	Male three 3-notes at:	21hr 15min 28sec Wise, Gayner, 2111-2121, 1992-03, 0.72 miles
	Male two 3-notes and two series to 3-notes at:	21hr 41min 09sec, 15sec, 23sec, 39sec,
	Male two 3-notes at:	21hr 49min 48sec, 54sec Wise, 2131-2150, "1992-??" between -3 and -5 is -12, 0.74miles
	Male six 3-notes plus one 3-note at:	23hr 28min 26sec, 23hr 29min 46sec (faint)
	Male four 3-notes at:	23hr 31min 33sec (getting closer) Wise, Gayner, 2328-2338, 1992-09, 0.31miles

Yellow Butte ARU #1 Survey 4/28/2022

YEB-1	SURV	Wise, Gayner, entire survey: 1900-0022
	Male four 3-notes at:	00hr 00min 39sec
	Male four 3-notes at:	00hr 40min 13sec
	Male four 3-notes at:	00hr 41min 59sec Wise, Gayner, 2357-0007, 1992-10, 0.39 miles
	Male two 3-notes at:	21hr 15min 15 sec Wise, walk-in 2021-2100 to 1992-07, 0.19 mile

Yellow Butte ARU #4 detection 7/1/2022 (6/30 survey)

YEB-4	STOC	
	Male one 3-notes at:	00hr 10min 35 sec (slightly farther)
	Male two 3-notes at:	00hr 10min 52 sec, 11min 09sec (closer)
	Whistle at:	00hr 09min 57sec (possibly more throughout, VERY faint)

Yellow Butte ARU #2 detection 7/12/2022

YEB-2	STOC	
	Male three 3-notes at:	22hr 55min 44sec (one distant and two closer)

Yellow Creek ARU #2 detection 4/05/2022

YEC-2	STOC	
	Male 3-note:	20hr 17min 36sec (distance?)
	Male 3-note to two series to two 4-note:	20hr 19min 43sec (moderate)

Yellow Creek ARU #1 detection 4/06/2022

YEC-1	STOC	
	Male two 3-notes:	23hr 09min 51sec, 10min 19sec
		Three indistinct hoots

Yellow Creek ARU #1 Survey 4/14/2022

YEC-1	SURV	Bright, 2222-2232, 0391-02, 0.86mi
	Male two ¾-notes:	22hr 24min 16sec
	Male three-note and WHIS:	22hr 24min 52sec (overall windy)

Yellow Creek ARU #1 detection 7/06-07/2022

YEC-1	STOC	
	Male four 3-notes:	00hr 38min 33sec (moving farther away)

Yellow Creek ARU #1 detection 7/13/2022

YEC-1	STOC	
	BUVI present:	21hr 29min 38sec
	Male one distant 4-note:	21hr 30min 29sec

Kufta-Christie, Lindsey A

From: Kufta-Christie, Lindsey A
Sent: Friday, February 23, 2024 10:50 AM
To: Mowdy, Jason S
Subject: 2022-23 document changes
Attachments: 22_23_NSOdetection_timelinePERstation.docx

Hi Jason,

Attached is the document we went over this morning so you can see the changes that were made during our conversation.

Many thanks for revisiting this topic again, helps to clarify and talk it out.
Lindsey

2022-2023 NSO Recordings (Survey and STOC)

All times mark the beginning of the individuals 'grouped' vocalizations unless noted otherwise

Upper Yellow Creek ARU #1 & 3 detections 3/16/2022

UYC-1 **SURV** Reeder, 1924-12, 2057-2108, 1.07miles
Was he playing the recording?
Keller, 1924-04, 2107-2117, questionable, 1.72miles, also not picked up at UYC-3 which is closer.

BUVI at:	19hr 31min 49sec
Male 4-note at:	20hr 56min 00sec
Male two series to a 2-note at:	20hr 56min 11sec
Male one 4-note at:	20hr 56min 36sec
Male three irregular call/series? to a 2-note at:	20hr 56min 36sec
Male one 4-note at:	21hr 01min 12sec
Male two series at:	21hr 01min 20sec
Male one 4-note at:	21hr 01min 46sec
Female four ¾-notes at:	21hr 03min 22sec
Male three ¾-notes	21hr 04min 08sec
STVA 8-note at:	21hr 04min 43sec
Whistle seven + 4-barks at:	21hr 05min 49sec

UYC-3 **walk-in SURV** Reeder, 1924-12, 1.22miles
Bright, 1992-06, 1920-1930, 1.39miles

BUVI at:	19hr 19min 09sec
ER one 4-note at:	19hr 21min 30sec
ER 4-note at:	20hr 00min 59sec
ER two 4-notes at:	20hr 03min 17sec, 40sec
ER random hoots:	20hr 05min 58sec
ER 4-note:	20hr 07min 38sec

Reeder hikes to station 1924-12 (no times recorded but from Kellers start time at station 1924-08 at 2005, assume she drops Reeder off at 1800/1830 (see DOC-5) 1900 and he starts hooting on his way in. Survey at station 1924-12 is from 2057-2108. Reeder walks from 1924-12 to 1804-02, presumably does NOT call post survey from 2108 to 2156. Surveys 1804-02 from 2156-2206, hears whistles (repeated six times), estimates detection point at: 10 N 465613 4818859 from station 1804-02 (azimuth of 171degrees at ~100m), hikes into stand crashes and "left stand" at 2236. UYC-3 to 1804-02 is 0.91miles. Keller surveys station

1924-06 from 2158-2208. Distance from 1924-06 Keller to 1804-02 Reeder is 1.07miles. He could have heard the seven whistles in the recording of Kellers survey. Was there a radio check-in?

UYC-3	SURV	Keller 1924-03, 21:28-21:38, 0.49 miles and 1924-06, 21:58-22:08, 0.73 miles
	Female four 3-notes at:	21hr 33min 11sec
	7 whistles and 6 barks at:	21hr 35min 38sec
	Ends at:	21hr 36min 32sec
	SURV	SURVEYOR
	Female four 3-notes at:	22hr 06min 03sec
	7 whistles at:	22hr 08min 30sec
	5 barks (very faint) ends at:	22hr 09min 23sec

UYC-4	walk-in SURV	Reeder walk-in to 1924-12, 1.12miles
	ER one 4-note at:	19hr 21min 26sec
	(Document faint, moderate, distant "qualifier")	

Doe Creek ARU #5 detections (ARU deployed 3/3/2022) 3/16/2022

DOC-5	walk-in SURV	Reeder walk-in detected by UYC-3 & -4 1921 and 2000 hour, no data card
	ER two 4-notes at:	18hr 33min 01sec**
	ER one 4-note at:	18hr 34min 31sec
	ER one 4-notes at:	18hr 35min 56sec
	ER one 4-note at:	18hr 37min 08sec
	ER one 4-note at:	18hr 43min 13sec
	ER two 4-notes at:	18hr 46min 51sec

Yellow Trib ARU #3 detections 3/16/2022

YET-3	walk-in SURV	Keller, 1992-07, (1730-1930), 0.95mi
	Female four 3-notes at:	18hr 29min 26sec

Yellow Butte ARU #1 detections 4/27/2022

YEB-1	SURV	Wise, Gayner, entire survey: 1900-0022
	Male two 3-notes at:	20hr 50min 27sec, 50min 44sec
	Female? four 3-notes at:	20hr 52min 58sec, 53min 15sec, 31sec, 44sec (mod-faint vocalizations)
		Wise, Gayner, 2050-2100, 1992-04, 0.73miles

Male three 3-notes at: 21hr 15min 28sec
Wise, Gayner, 2111-2121, 1992-03, 0.72 miles
Male two 3-notes and two series to 3-notes at:
21hr 41min 09sec, 15sec, 23sec, 39sec,
Male two 3-notes at: 21hr 49min 48sec, 54sec
Wise, 2131-2150, "1992-??" between -3 and -5 is -12, 0.74miles
Male six 3-notes plus one 3-note at:
23hr 28min 26sec, 23hr 29min 46sec (faint)
Male four 3-notes at: 23hr 31min 33sec (getting closer)
Wise, Gayner, 2328-2338, 1992-09, 0.31miles

Yellow Butte ARU #1 detections 4/28/2022 Recording in ARU_B&G file

YEB-1 SURV
Male two 3-notes at: 21hr 15min 15 sec
Wise, walk-in 2021-2100 to 1992-07, 0.19 mile (qualifier)
Wise, Gayner, entire survey: 1900-0022
Male four 3-notes at: 00hr 00min 39sec
Male four 3-notes at: 00hr 40min 13sec
Male four 3-notes at: 00hr 41min 59sec clip for Jason
Wise, Gayner, 2357-0007, 1992-10, 0.39 miles

Yellow Butte ARU #4 detection 7/1/2022 (6/30 survey)

YEB-4 SURV Wise, 4659-02, 0007-0017, 1.31miles
Male one 3-notes at: 00hr 10min 35 sec (slightly farther)
Male two 3-notes at: 00hr 10min 52 sec, 11min 09sec (closer)
Whistle at: 00hr 09min 57sec (possibly more throughout, VERY faint)
Question the direction of the callbox
clip for Jason detect a Wise-tone call
She had a giddy-up in her last note
Inquire about more surrounding vocalizations
Add ARU to yellow butte sec 22 and 23

Yellow Butte ARU #2 detection 7/12/2022

YEB-2	STOC or SURV	Wise, 2252-2302, 4682-04, 1.5miles
	Male three 3-notes at:	22hr 55min 44sec
		(one distant and two closer)
		Clip for Jason (louder or softer)

Yellow Creek ARU #2 detection 4/05/2022

YEC-2	STOC	
	Male 3-note:	20hr 17min 36sec (distance?)
	Male 3-note to two series to two 4-note:	
		20hr 19min 43sec (moderate)

Yellow Creek ARU #1 detection 4/06/2022

YEC-1	STOC	
	Male two 3-notes:	23hr 09min 51sec, 10min 19sec
		Hoots have a strange echo effect

Yellow Creek ARU #1 detections 4/14/2022

YEC-1	SURV	Bright, 2222-2232, 0391-02, 0.86mi
	Whistle:	22hr 23min 27sec
	Male two ¾-notes:	22hr 24min 17sec
	Male 3-note:	22hr 24min 29sec
	Male three-note:	22hr 24min 53sec
	Whistle:	22hr 25min 00sec
	Three whistles:	22hr 27min 26sec (overall windy)

Yellow Creek ARU #1 detection 7/06-07/2022

YEC-1	SURV	Bright, 0039-0052, 1972-11, miles?
	Male four 3-notes:	00hr 38min 33sec (moving farther away)

Yellow Creek ARU #1 detection 7/13/2022

YEC-1	SURV	1804-03, 2127-2137, 1.09miles
	BUVI present:	21hr 29min 38sec
	Male one distant 4-note:	21hr 30min 29sec

Doe Creek ARU #7 detection 6/14/2023

DOC-7	STOC, juvenile and STVA	
	STVA before and after STOC recording	
	Male two 4-notes to two series:	20hr 41min 14sec
	Male 4-note	20hr 42min 08sec
	Male four 4-notes with overlapping juvenile calls plus two notes:	20hr 45min 13sec
	Female single high hoot?	20hr 45min 13sec
	STVA inspection and faint 8-notes:	20hr 50min 22sec
	Male first three notes, then two 4-notes:	20hr 52min 00sec
	Male one 4-note:	20hr 52min 23sec
	STVA/STOC:	20hr 52min 59sec
	(Indistinct calls afterwards)	
	STVA 8-note, caterwauling, and juvenile calling:	20hr 55min 37sec

Yellow Butte ARU #4 detection 5/10/2023

YEB-4	STOC	
	Male one 4-note:	03hr 25min 00sec
	STOC	
	Female three 3-notes:	starting slide at 22hr 39min 53min 57sec into slide Results in time:23hr 32min XXsec
YEB-4	SURV??	
	Female??	
	Barks at:	57:34.85

Upper Yellow Creek ARU #3 detection 6/14/2023

Kufta-Christie, Lindsey A

From: Kufta-Christie, Lindsey A
Sent: Monday, February 26, 2024 7:40 AM
To: Mowdy, Jason S
Subject: Updated 22-23 detections as of 2/26
Attachments: 22_23_NSOdetection_timelinePERstation.docx

Hi Jason,

I came in early today to review the dates and detection times again. At the end of each years detection summary is a simple table with reference to the actual STOC detected.

Lindsey

2022-2023 Survey and STOC recordings

All times mark the beginning of the individuals 'grouped' vocalizations unless noted
See Table 1 and 2 for ARU detection summaries in 2022 and 2023

Upper Yellow Creek ARU #1 & 3 detections 3/16/2022

UYC-1 SURV

Reeder, 1924-12, 2057-2108, 1.07miles
Was he playing the recording?
Keller, 1924-04, 2107-2117, questionable, 1.72miles, also not picked up at UYC-3 which is closer.

BUVI at:	19hr 31min 49sec
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Male three ¾-notes	21hr 04min 08sec
STVA 8-note at:	21hr 04min 43sec
Whistle seven + 4-barks at:	21hr 05min 49sec

UYC-3 walk-in SURV

Reeder, 1924-12, 1.22miles
Bright, 1992-06, 1920-1930, 1.39miles

BUVI at:	19hr 19min 09sec
ER one 4-note at:	19hr 21min 30sec
ER 4-note at:	20hr 00min 59sec
ER two 4-notes at:	20hr 03min 17sec, 40sec
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ER 4-note:	20hr 07min 38sec

Reeder hikes to station 1924-12 (no times recorded but from Kellers start time at station 1924-08 at 2005, assume she drops Reeder off at 1800/1830 (see DOC-5) 1900 and he starts hooting on his way in. Survey at station 1924-12 is from 2057-2108. Reeder walks from 1924-12 to 1804-02, presumably does NOT call post survey from 2108 to 2156. Surveys 1804-02 from 2156-2206, hears whistles (repeated six times), estimates detection point at: 10 N 465613 4818859 from station 1804-02 (azimuth of 171degrees at ~100m), hikes into stand crashes and "left stand" at 2236. UYC-3 to 1804-02 is 0.91miles. Keller surveys station

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	SURV	SURVEYOR
	Female four 3-notes at:	22hr 06min 03sec
	7 whistles at:	22hr 08min 30sec
	5 barks (very faint) ends at:	22hr 09min 23sec

UYC-4	walk-in SURV	Reeder walk-in to 1924-12, 1.12miles
	ER one 4-note at:	19hr 21min 26sec
	(Document faint, moderate, distant "qualifier")	

Doe Creek ARU #5 detections (ARU deployed 3/3/2022) 3/16/2022

DOC-5	walk-in SURV	Reeder walk-in detected by UYC-3 & -4 1921 and 2000 hour, no data card
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	ER one 4-note at:	18hr 34min 31sec
	ER one 4-notes at:	18hr 35min 56sec
	ER one 4-note at:	18hr 37min 08sec
	ER one 4-note at:	18hr 43min 13sec
	ER two 4-notes at:	18hr 46min 51sec

Yellow Trib ARU #3 detections 3/16/2022

YET-3	walk-in SURV	Keller, 1992-07, (1730-1930), 0.95mi
	Female four 3-notes at:	18hr 29min 26sec

Yellow Butte ARU #1 detections 4/27/2022

YEB-1	SURV	Wise, Gayner, entire survey: 1900-0022
	Male two 3-notes at:	20hr 50min 27sec, 50min 44sec
	Female? four 3-notes at:	20hr 52min 58sec, 53min 15sec, 31sec, 44sec (mod-faint vocalizations)
		Wise, Gayner, 2050-2100, 1992-04, 0.73miles

Male three 3-notes at: 21hr 15min 28sec
Wise, Gayner, 2111-2121, 1992-03, 0.72 miles
Male two 3-notes and two series to 3-notes at:
21hr 41min 09sec, 15sec, 23sec, 39sec,
Male two 3-notes at: 21hr 49min 48sec, 54sec
Wise, 2131-2150, "1992-??" between -3 and -5 is -12, 0.74miles
Male six 3-notes plus one 3-note at:
23hr 28min 26sec, 23hr 29min 46sec (faint)
Male four 3-notes at: 23hr 31min 33sec (getting closer)
Wise, Gayner, 2328-2338, 1992-09, 0.31miles

Yellow Butte ARU #1 detections 4/28/2022

Recording in ARU_B&G file

YEB-1 SURV

Male two 3-notes at: 21hr 15min 15 sec
Wise, walk-in 2021-2100 to 1992-07, 0.19 mile (qualifier)
Male four 3-notes at: 00hr 00min 42sec
Male four 3-notes at: 00hr 01min 00sec
Male four 3-notes at: 00hr 01min 28sec
Wise, Gayner, 2357-0007, 1992-10, 0.39 miles
Wise, Gayner, entire survey: 1900-0022

Yellow Butte ARU #4 detection 7/1/2022 (6/30 survey)

YEB-4 SURV
Wise, 4659-02, 0007-0017, 1.31miles
Male one 3-notes at: 00hr 10min 35 sec (slightly farther)
Male two 3-notes at: 00hr 10min 52 sec, 11min 09sec (closer)
Whistle at: 00hr 09min 57sec (possibly more throughout, VERY faint)
Question(s): the direction of the callbox? Wise has a giddy-up in her last note
Any more surrounding vocalizations?

Yellow Butte ARU #2 detection 7/12/2022

YEB-2	STOC or SURV	Wise, 2252-2302, 4682-04, 1.5miles
	Male three 3-notes at:	22hr 55min 44sec
		(one distant and two closer)

Yellow Creek ARU #2 detection 4/05/2022

YEC-2	STOC	
	Male 3-note:	20hr 17min 36sec (sound-distance?)
	Male 3-note to two series to two 4-note:	
		20hr 19min 43sec (moderate)

Yellow Creek ARU #1 detection 4/06/2022

YEC-1	STOC	
	Male two 3-notes:	23hr 09min 51sec, 10min 19sec
		Hoots have a strange echo effect

Yellow Creek ARU #1 detections 4/14/2022

YEC-1	SURV	Bright, 2222-2232, 0391-02, 0.86mi
	Whistle:	22hr 23min 27sec
	Male two ¾-notes:	22hr 24min 17sec
	Male 3-note:	22hr 24min 29sec
	Male three-note:	22hr 24min 53sec
	Whistle:	22hr 25min 00sec
	Three whistles:	22hr 27min 26sec (overall windy)

Yellow Creek ARU #1 detection 7/06-07/2022

YEC-1	SURV	Whitt, 0035-0045, 1972-04, 0.73 miles
	Male four 3-notes:	00hr 38min 33sec (moving farther away)

Yellow Creek ARU #1 detection 7/13/2022

YEC-1	SURV	1804-03, 2127-2137, 1.09miles
	BUVI present:	21hr 29min 38sec
	Male one distant 4-note:	21hr 30min 29sec

Table 1. Summary of ARU detections in 2022

STOC presence	ARU station location	M, F, Juvenile	Date, time
Yes	Yellow Creek sta. 2	M	4/05/22, 20:17
Yes	Yellow Creek sta. 1	M	4/06/23, 23:09

Doe Creek ARU #7 detection 6/14/2023

DOC-7 STOC, juvenile and STVA
STVA before and after STOC recording
Male two 4-notes to two series: 20hr 41min 14sec
Male 4-note 20hr 42min 08sec
Male four 4-notes with overlapping juvenile calls plus two notes: 20hr 45min 13sec
Female single high hoot? 20hr 45min 13sec
STVA inspection and faint 8-notes: 20hr 50min 22sec
Male first three notes, then two 4-notes: 20hr 52min 00sec
Male one 4-note: 20hr 52min 23sec
STVA/STOC: 20hr 52min 59sec
(Indistinct calls afterwards)
STVA 8-note, caterwauling, and juvenile calling: 20hr 55min 37sec

Yellow Butte ARU #4 detection 5/10/2023

YEB-4 STOC
Male one 4-note: 04hr 20min 00sec

Yellow Butte ARU #4 detection 5/22/2023

YEB-4 STOC
Female three 3-notes: 23hr 32min 58sec
23hr 33min 16sec, 32sec
Barks: 23hr 36min 36sec

Yellow Creek ARU #3 detection 7/27/2023

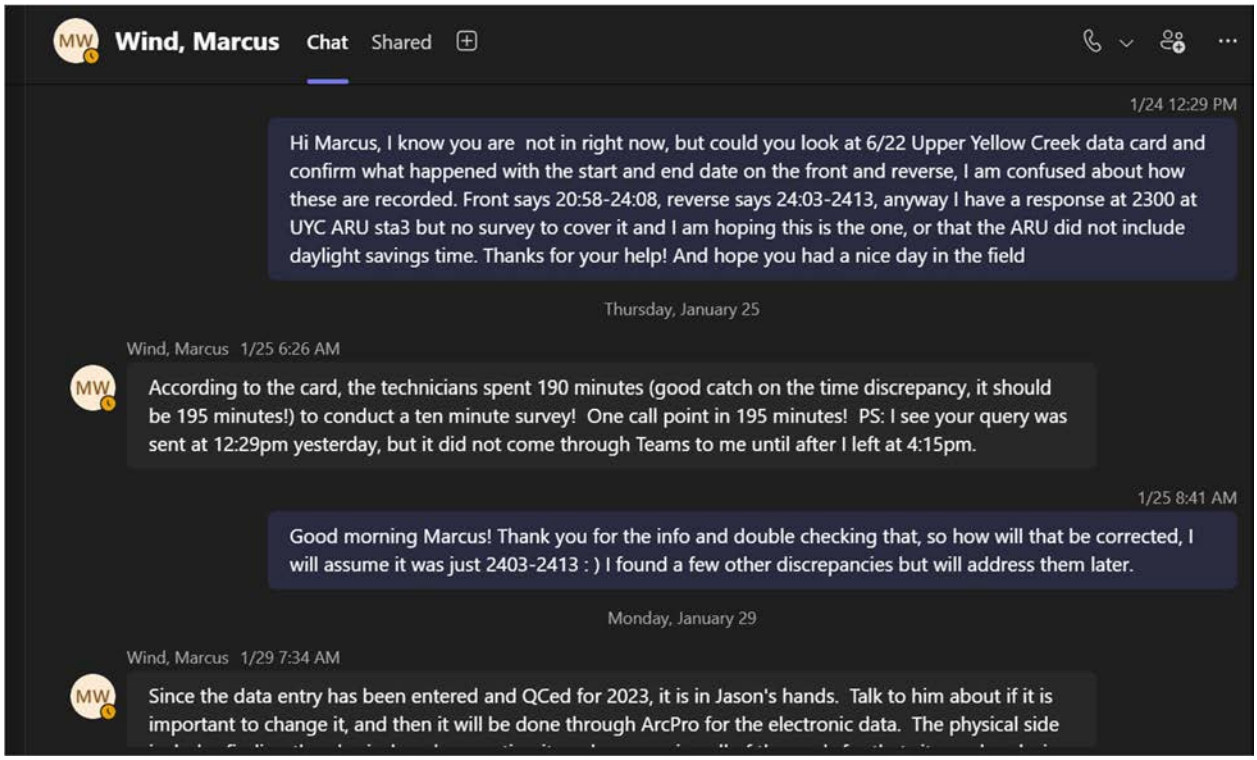
SURV Mowdy, HM, 1972-06, 2246-2256, 0.6 miles
Male four 3-note: 22hr 48min 50sec

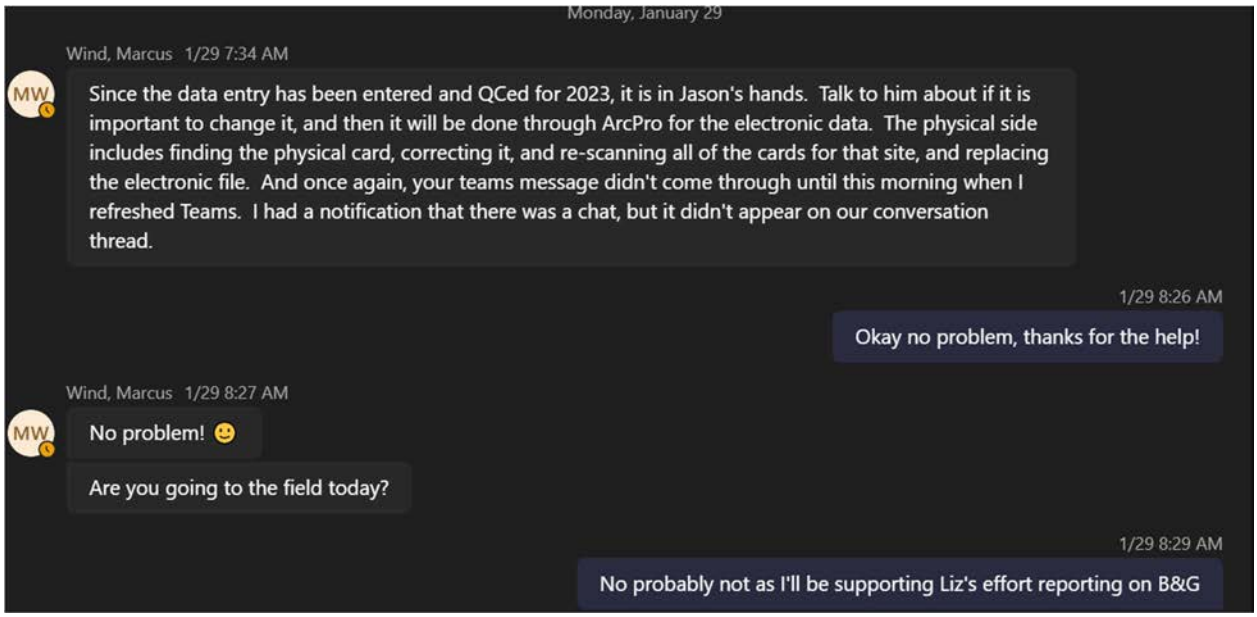
Yellow Creek ARU #3 detection 8/03/2023

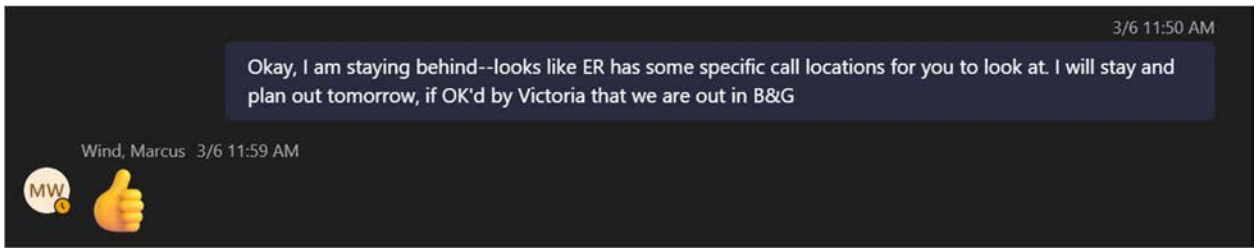
STOC Mowdy, 1980-13, 2133-2143, 3.8 miles
Male one 3-note: 22hr 23min 40sec

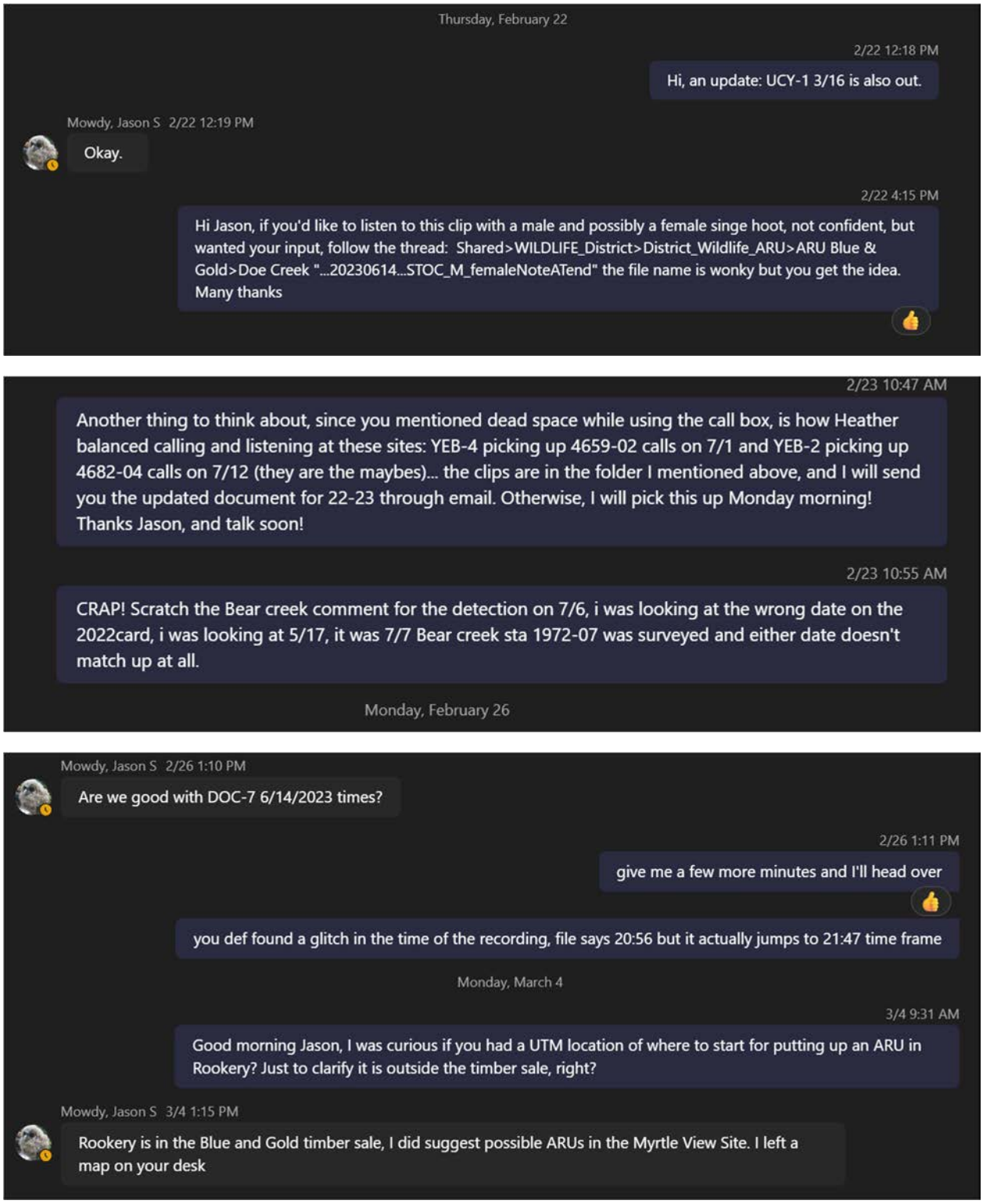
Table 2. Summary of ARU detections in 2023

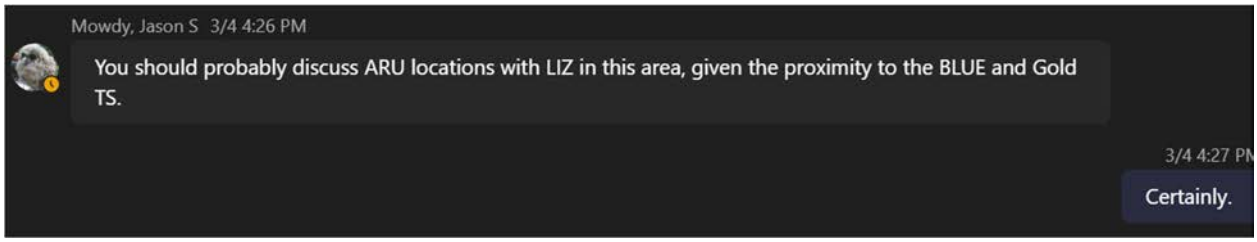
STOC presence	ARU station location	M, F, Juvenile	Date, time
Yes	Doe Creek sta. 7	M, F, Juv	6/14/23, 20:41
Yes	Yellow Butte sta. 4	M	5/10/23, 04:20
Yes	Yellow Butte sta. 4	F	5/22/23, 23:32
Yes	Yellow Creek sta. 3	M	8/03/23, 22:23

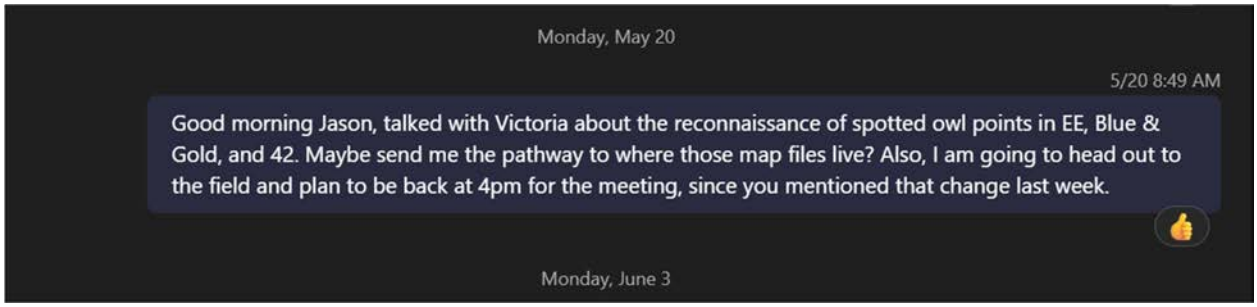

Wind, Marcus
Chat
Shared
1/24 12:29 PM
Hi Marcus, I know you are not in right now, but could you look at 6/22 Upper Yellow Creek data card and confirm what happened with the start and end date on the front and reverse, I am confused about how these are recorded. Front says 20:58-24:08, reverse says 24:03-2413, anyway I have a response at 2300 at UYC ARU sta3 but no survey to cover it and I am hoping this is the one, or that the ARU did not include daylight savings time. Thanks for your help! And hope you had a nice day in the field
Thursday, January 25
Wind, Marcus 1/25 6:26 AM
According to the card, the technicians spent 190 minutes (good catch on the time discrepancy, it should be 195 minutes!) to conduct a ten minute survey! One call point in 195 minutes! PS: I see your query was sent at 12:29pm yesterday, but it did not come through Teams to me until after I left at 4:15pm.
1/25 8:41 AM
Good morning Marcus! Thank you for the info and double checking that, so how will that be corrected, I will assume it was just 2403-2413 :) I found a few other discrepancies but will address them later.
Monday, January 29
Wind, Marcus 1/29 7:34 AM
Since the data entry has been entered and QCed for 2023, it is in Jason's hands. Talk to him about if it is important to change it, and then it will be done through ArcPro for the electronic data. The physical side

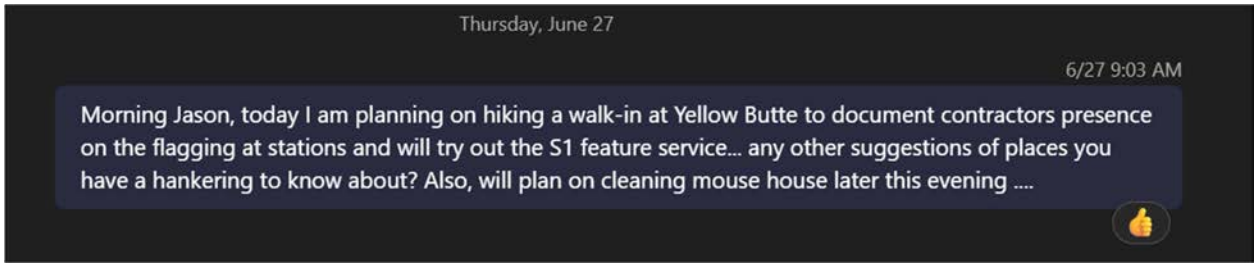

Monday, January 29
Wind, Marcus 1/29 7:34 AM
Since the data entry has been entered and QCed for 2023, it is in Jason's hands. Talk to him about if it is important to change it, and then it will be done through ArcPro for the electronic data. The physical side includes finding the physical card, correcting it, and re-scanning all of the cards for that site, and replacing the electronic file. And once again, your teams message didn't come through until this morning when I refreshed Teams. I had a notification that there was a chat, but it didn't appear on our conversation thread.
1/29 8:26 AM
Okay no problem, thanks for the help!
Wind, Marcus 1/29 8:27 AM
No problem!
Are you going to the field today?
1/29 8:29 AM
No probably not as I'll be supporting Liz's effort reporting on B&G

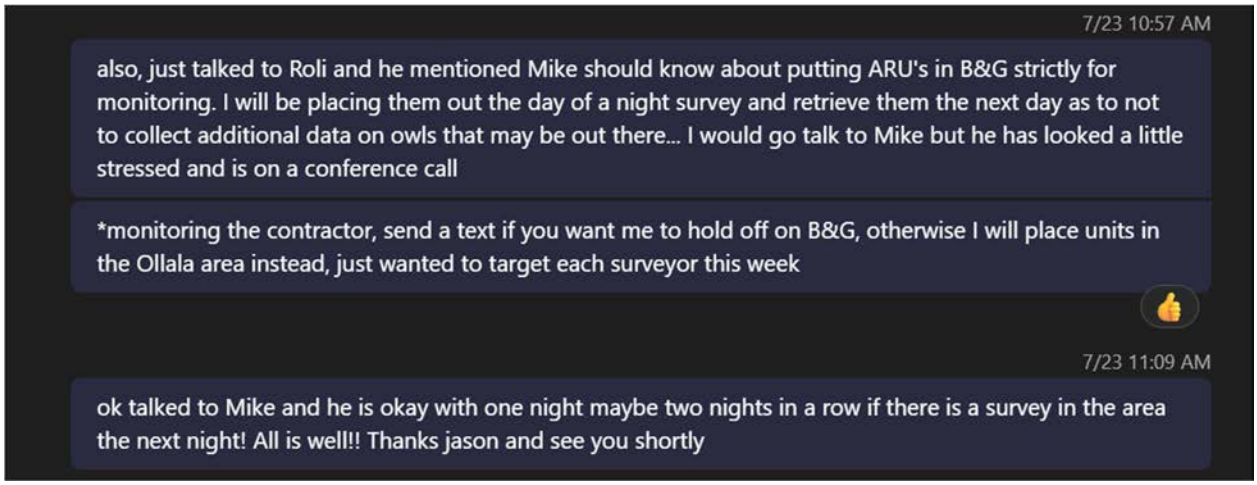

3/6 11:50 AM
Okay, I am staying behind--looks like ER has some specific call locations for you to look at. I will stay and plan out tomorrow, if OK'd by Victoria that we are out in B&G
Wind, Marcus 3/6 11:59 AM

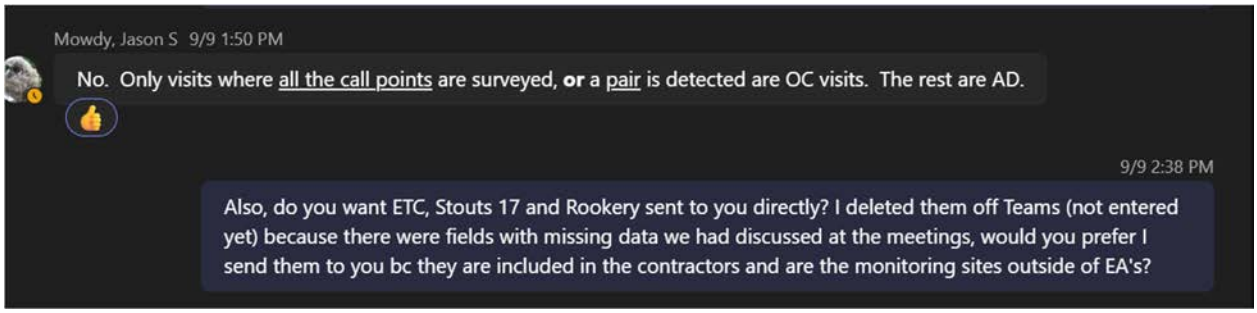

Thursday, February 22
2/22 12:18 PM
Hi, an update: UCY-1 3/16 is also out.
Mowdy, Jason S 2/22 12:19 PM
Okay.
2/22 4:15 PM
Hi Jason, if you'd like to listen to this clip with a male and possibly a female singe hoot, not confident, but wanted your input, follow the thread: Shared>WILDLIFE_District>District_Wildlife_ARU>ARU Blue & Gold>Doe Creek "...20230614...STOC_M_femaleNoteATend" the file name is wonky but you get the idea. Many thanks
2/23 10:47 AM
Another thing to think about, since you mentioned dead space while using the call box, is how Heather balanced calling and listening at these sites: YEB-4 picking up 4659-02 calls on 7/1 and YEB-2 picking up 4682-04 calls on 7/12 (they are the maybes)... the clips are in the folder I mentioned above, and I will send you the updated document for 22-23 through email. Otherwise, I will pick this up Monday morning! Thanks Jason, and talk soon!
2/23 10:55 AM
CRAP! Scratch the Bear creek comment for the detection on 7/6, i was looking at the wrong date on the 2022card, i was looking at 5/17, it was 7/7 Bear creek sta 1972-07 was surveyed and either date doesn't match up at all.
Monday, February 26
Mowdy, Jason S 2/26 1:10 PM
Are we good with DOC-7 6/14/2023 times?
2/26 1:11 PM
give me a few more minutes and I'll head over
you def found a glitch in the time of the recording, file says 20:56 but it actually jumps to 21:47 time frame
Monday, March 4
3/4 9:31 AM
Good morning Jason, I was curious if you had a UTM location of where to start for putting up an ARU in Rookery? Just to clarify it is outside the timber sale, right?
Mowdy, Jason S 3/4 1:15 PM
Rookery is in the Blue and Gold timber sale, I did suggest possible ARUs in the Myrtle View Site. I left a map on your desk

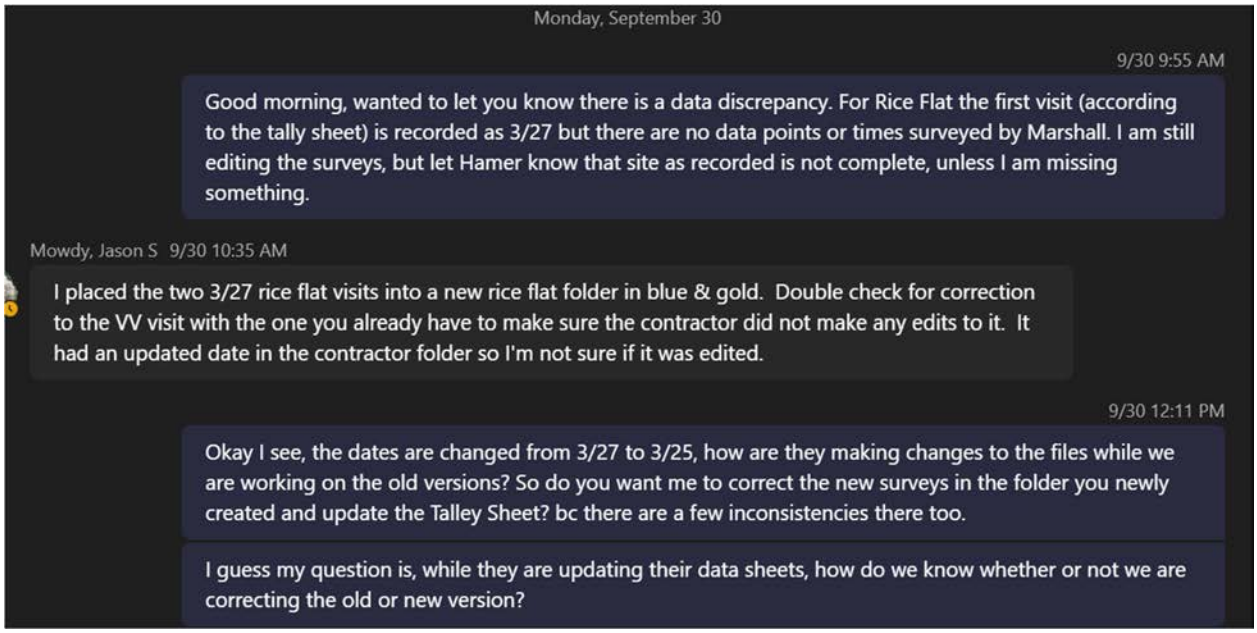

Mowdy, Jason S 3/4 4:26 PM
You should probably discuss ARU locations with LIZ in this area, given the proximity to the BLUE and Gold TS.
3/4 4:27 PM
Certainly.

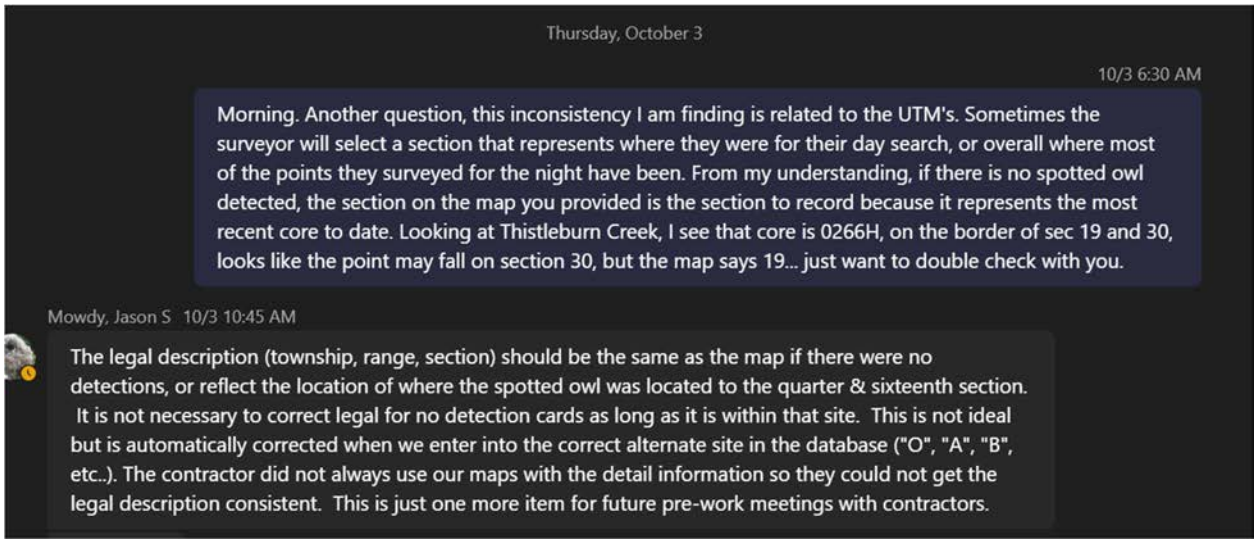

Monday, May 20
5/20 8:49 AM
Good morning Jason, talked with Victoria about the reconnaissance of spotted owl points in EE, Blue & Gold, and 42. Maybe send me the pathway to where those map files live? Also, I am going to head out to the field and plan to be back at 4pm for the meeting, since you mentioned that change last week.
Monday, June 3

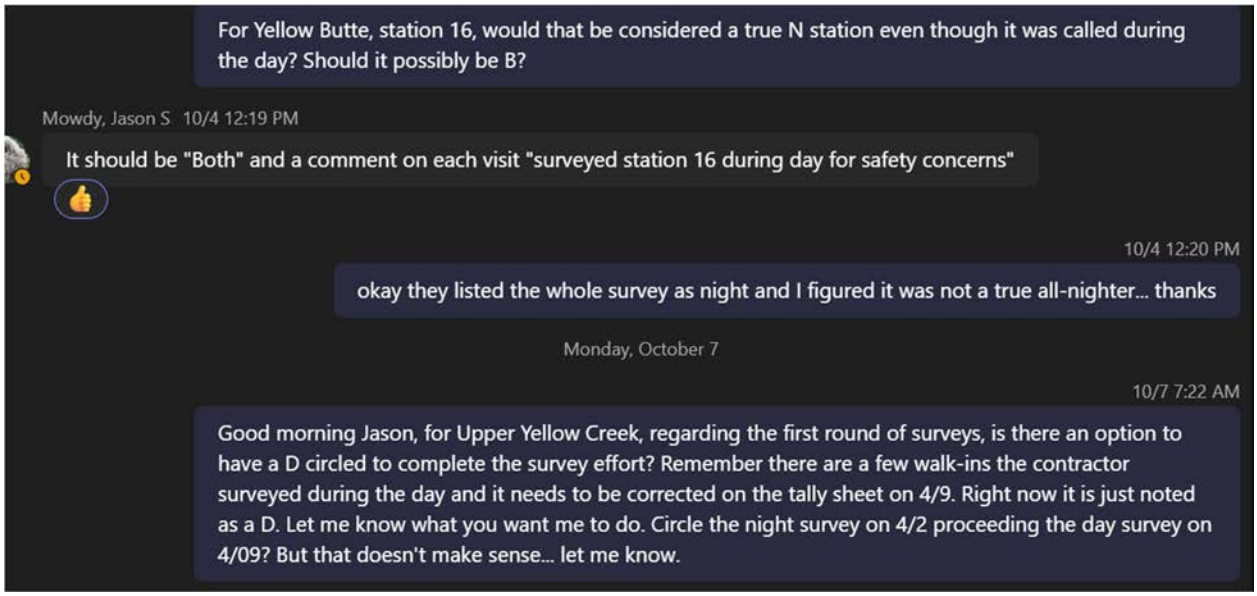

Thursday, June 27
6/27 9:03 AM
Morning Jason, today I am planning on hiking a walk-in at Yellow Butte to document contractors presence on the flagging at stations and will try out the S1 feature service... any other suggestions of places you have a hankering to know about? Also, will plan on cleaning mouse house later this evening ....

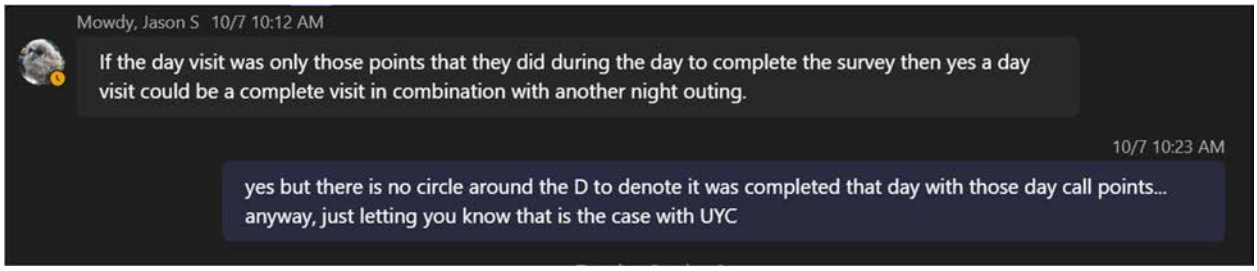

7/23 10:57 AM
also, just talked to Roli and he mentioned Mike should know about putting ARU's in B&G strictly for monitoring. I will be placing them out the day of a night survey and retrieve them the next day as to not to collect additional data on owls that may be out there... I would go talk to Mike but he has looked a little stressed and is on a conference call
*monitoring the contractor, send a text if you want me to hold off on B&G, otherwise I will place units in the Ollala area instead, just wanted to target each surveyor this week
7/23 11:09 AM
ok talked to Mike and he is okay with one night maybe two nights in a row if there is a survey in the area the next night! All is well!! Thanks jason and see you shortly


Mowdy, Jason S 9/9 1:50 PM
No. Only visits where all the call points are surveyed, or a pair is detected are OC visits. The rest are AD.
9/9 2:38 PM
Also, do you want ETC, Stouts 17 and Rookery sent to you directly? I deleted them off Teams (not entered yet) because there were fields with missing data we had discussed at the meetings, would you prefer I send them to you bc they are included in the contractors and are the monitoring sites outside of EA's?


Monday, September 30
9/30 9:55 AM
Good morning, wanted to let you know there is a data discrepancy. For Rice Flat the first visit (according to the tally sheet) is recorded as 3/27 but there are no data points or times surveyed by Marshall. I am still editing the surveys, but let Hamer know that site as recorded is not complete, unless I am missing something.
Mowdy, Jason S 9/30 10:35 AM
I placed the two 3/27 rice flat visits into a new rice flat folder in blue & gold. Double check for correction to the VV visit with the one you already have to make sure the contractor did not make any edits to it. It had an updated date in the contractor folder so I'm not sure if it was edited.
9/30 12:11 PM
Okay I see, the dates are changed from 3/27 to 3/25, how are they making changes to the files while we are working on the old versions? So do you want me to correct the new surveys in the folder you newly created and update the Talley Sheet? bc there are a few inconsistencies there too.
I guess my question is, while they are updating their data sheets, how do we know whether or not we are correcting the old or new version?


Thursday, October 3
10/3 6:30 AM
Morning. Another question, this inconsistency I am finding is related to the UTM's. Sometimes the surveyor will select a section that represents where they were for their day search, or overall where most of the points they surveyed for the night have been. From my understanding, if there is no spotted owl detected, the section on the map you provided is the section to record because it represents the most recent core to date. Looking at Thistleburn Creek, I see that core is 0266H, on the border of sec 19 and 30, looks like the point may fall on section 30, but the map says 19... just want to double check with you.
Mowdy, Jason S 10/3 10:45 AM
The legal description (township, range, section) should be the same as the map if there were no detections, or reflect the location of where the spotted owl was located to the quarter & sixteenth section. It is not necessary to correct legal for no detection cards as long as it is within that site. This is not ideal but is automatically corrected when we enter into the correct alternate site in the database ("O", "A", "B", etc..). The contractor did not always use our maps with the detail information so they could not get the legal description consistent. This is just one more item for future pre-work meetings with contractors.


For Yellow Butte, station 16, would that be considered a true N station even though it was called during the day? Should it possibly be B?
Mowdy, Jason S 10/4 12:19 PM
It should be "Both" and a comment on each visit "surveyed station 16 during day for safety concerns"
10/4 12:20 PM
okay they listed the whole survey as night and I figured it was not a true all-nighter... thanks
Monday, October 7
10/7 7:22 AM
Good morning Jason, for Upper Yellow Creek, regarding the first round of surveys, is there an option to have a D circled to complete the survey effort? Remember there are a few walk-ins the contractor surveyed during the day and it needs to be corrected on the tally sheet on 4/9. Right now it is just noted as a D. Let me know what you want me to do. Circle the night survey on 4/2 proceeding the day survey on 4/09? But that doesn't make sense... let me know.


Mowdy, Jason S 10/7 10:12 AM
If the day visit was only those points that they did during the day to complete the survey then yes a day visit could be a complete visit in combination with another night outing.
10/7 10:23 AM
yes but there is no circle around the D to denote it was completed that day with those day call points... anyway, just letting you know that is the case with UYC

Site	Hexagon ID	# of ARUs (n = 23/5 hex+3floaters)	ARU #1				
			Surveyor	Date deployed	Station #	ARU ID	UTMx
Blue & Gold							
Doe Creek	18828	4	Reeder	05/04/23	DOC 6	SM Mini 14 (SMA05363)	467065
Upper Yellow Creek	18733	4	ER&LKC	06/13/23	UYC-1	SM4 #4 (S4A16577)	465967
Yellow Butte	18829	4	Wise	05/03/23	YEB 3	SM Mini 10 (SMA05394)	468973
Yellow Creek	18732	4	LKC	06/29/23	YEC 1	SM mini #16 (SMA05357)	463689
~~Yellow Trib~~	18734						
Lower Yellow Creek	Multiple	4	LKC	07/18/23	LYC 1	SM mini #3 (SMA04809)	463799

		ARU #2				
UTMy	**Notes**	**Surveyor**	**Date deployed**	**Station #**	**ARU ID**	**UTMx**
4820945		Reeder	5/4/23	DOC 7	Mini #16 (SMA05357)	467618
4817608	SD card SS	ER&LKC	6/13/23	UYC-2	SM4 #7 (S4A20179)	466991
4822194		Wise	5/3/23	YEB 2	SM mini #11 (SMA05334)	468683
4818885	SD card WW	LKC	6/28/23	YEC 2	SM mini #6 (SMA05358)	464230
4816738	SD card TT	LKC	7/18/23	LYC 2	SM mini #10 (SMA05394)	463003

		ARU #3					
UTMy	**Notes**	**Surveyor**	**Date deployed**	**Station #**	**ARU ID**	**UTMx**	**UTMy**
4820713		Reeder	6/15/23	DOC 3	Mini #15 (SMA05269)	466755	4820257
4816837	SD card VV	ER&LKC	6/13/23	UYC-3	SM4 #3 (S4A16574)	467342	4817690
4821004		Reeder	5/4/23	YEB 4	Mini #3 (SMA04809)	469939	4821923
4818239	SD card EE (unit was finicky)	LKC	6/27/23	YEC 3	SM mini#11 (SMA05334)	465185	4818355
4816175	SD card UU	LKC	7/20/23	LYC 3	SM mini #8 (SMA05328)	463817	4816510

	ARU #4					
Notes	**Surveyor**	**Date deployed**	**Station #**	**ARU ID**	**UTMx**	**UTMy**
ARU deployed 5/3 not ON; switched on 6/15	Wind	5/3/23	DOC 5	SM Mini #17 (SMA05351)	466423	4819191
SD card Q	ER&LKC	6/13/23	UYC-4	SM4 #2 (S4A13403)	467753	4818309
SD card O	Wind	5/4/23	YEB 1	SM Mini #4 (SMA04710)	468365	4820565
SD card XX	LKC	6/27/23	YEC 4	SM mini #14 (SMA05363)	465740	4818801
SD card ZZ	LKC	7/18/23	LCY 4	SM mini #17 (SMA05352)	465070	4817533

Notes	Surveyor	Date Retrieved	Station #	ARU ID
	ER	6/15/23	DOC 6	SM mini #14 (SM05363)
	LKC, LS, BG, L, A	7/25/23	UYC-4	SM4 #2 (S4A13403)
	ER	6/14/23	YEB 1	SMmini#4, (SMA04710)
	LKC	8/17/23	YEC-1	Smmini#16 (SMA05357)
SD card P	LKC	9/12/23	LYC-1	SM mini #3 (SMA04809)

ARU #1						
Date_time of recording	**UTMx**	**UTMy**	**Notes**	**Surveyor**	**Date Retrieved**	**Station #**
05/03/2023, 191700-6/15/2023, 225602			Rec'd in office 6/16, SD card RR,	ER	6/15/23	DOC 7
06/13/23, 200000-07/26/23, 063002	467753	4818309	Rec'd in office 7/25, SD card "U"	LKC	7/26/23	UYC-3
05/04/2023, 191800-6/14/2023, 205402			Rec'd in office 6/15, SD card PP; changed file names to "BLM_YEB13-1_	ER		YEB 2
06/29, 195900-8/14,222250	463689	4818885	Rec'd in office, 8/17, SD card WW	LKC	8/9/23	YEC-2
7/15/23, 195100-9/02/23, 215150	463799	4816738	Rec'd in office 9/12, SD card TT	LKC	9/12/23	LYC-2

ARU #2				
ARU ID	**Date_time of recording**	**UTMx**	**UTMy**	**Notes**
SM mini #16 (SMA05357)	5/03/2023, 192237-06/15/2023, 195600			Rec'd in office 6/16, SD card L
SM4 #3 (S4A16574)	06/13/2023, 200000-07/26/23, 063002	467333	4817679	Rec'd in office 7/26, SD card "Q"
SM Mini #11?? (SMA05334)				Rec'd in office 6/16, SD card T? (ER verify)
SM mini #6 (SMA05358)	6/28, 195900-8/10,071302	464230	4818239	Rec'd in office 8/9, SD card EE
SM mini #10 (SMA05394)	7/18/20, 195000-9/02/23, 195150	463003	4816175	Rec'd in office 9/12, SD card UU

ARU #3						
Surveyor	**Date Retrieved**	**Station #**	**ARU ID**	**Date_time of recording**	**UTMx**	**UTMy**
LKC	8/1/23	DOE-3	SM mini #15 (SMA05269)	/15/23, 220231-08/01/23,0704(	466755	4820257
LKC	7/25/23	UYC-1	SM4 #4 (S4A16577)	13/2023, 200000-07/26/23, 063	465993	4817591
LKC	7/6/23	YEB-4	SM mini #3 (SMA04809)	04/23 20013 - 6/16/2023 2318:	469939	4821923
LKC	8/9/23	YEC-3	SM mini #11 (SMA05334)	6/27, 195900-8/10, 061302	465185	4818355
LKC	9/12/23	LYC-3	SM mini #8 (SMA05328)	/20/23, 194900-9/04/23, 21475	463817	4816510

	ARU #4				
Notes	**Surveyor**	**Date Retrieved**	**Station #**	**ARU ID**	**Date_time of recording**
SD card "OO" rec'd in office 8/01	LKC	6/27/23	DOC-5	SM mini #17 (SMA05352)	05/03/2023, 191700-06/18/2023, 225950
Rec'd in office 7/26, SD card "SS"	LKC	7/26/23	UYC-2	SM4 #7 (S4A20179)	06/13/2023, 200000-07/26/23, 063002
d in office 7/6, SD card O, backed on B	LKC	7/10/23	YEB-3	SM mini#10 (SMA05394)	5/03/2023 191700-6/18/2023 225950
Rec'd in office 8/9, SD card XX	LKC	8/9/23	YEC-4	SM mini#14 (SMA05363)	06/23/2023, 195900-08/09/2023, 071202
Date rec'd 9/12, SD card ZZ	LKC	9/12/23	LYC-4	Smmini #17 (SMA05352)	7/18/23, 195000-9/2/23, 215150

UTMx	UTMy	Notes
466435	4819207	TYPO of last digit on ARU ID differs from deployment info
466983	4816834	Rec'd in office 7/26, SD card "VV"
468973	4822194	Rec'd in office 7/10/23, SD card Z
463689	4818885	Rec'd in office 8/17, SD card WW
465070	4817533	Rec'd in office 9/12, SD card P

Comments
Meet ARU Protocol - deploy for 6wks = two deployments per site/hexagon for 3-4 wks

Label	Site	Hexagon ID	Station #	UTMx	UTMy
YEC 1	Yellow Creek	18732	1	463715	4818895
YEC 2	Yellow Creek	18732	2	464209	4818224
YEC 3	Yellow Creek	18732	3	465221	4818336
YEC 4	Yellow Creek	18732	4	465795	4818858
UYC 1	Upper Yellow Creek	18733	1	465993	4817591
UYC 2	Upper Yellow Creek	18733	2	466983	4816834
UYC 3	Upper Yellow Creek	18733	3	467333	4817679
UYC 4	Upper Yellow Creek	18733	4	467753	4818309
YET 1	Yellow Trib	18734	1	468962	4818995
YET 2	Yellow Trib	18734	2	469265	4819690
YET 3	Yellow Trib	18734	3	469619	4819350
YET 4	Yellow Trib	18734	4	470214	4818710
DOC 3	Doe Creek	18828	3	466732	4820274
DOC 5	Doe Creek	18828	5	466438	4819206
DOC 6	Doe Creek	18828	6	467065	4820945
DOC 7	Doe Creek	18828	7	467626	4820705
YEB 1	Yellow Butte	18829	1	468366	4820562
YEB 2	Yellow Butte	18829	2	468683	4821004
YEB 3	Yellow Butte	18829	3	468973	4822194
YEB 4	Yellow Butte	18829	4	469939	4821925
LYC 1	Lower Yellow Creek	18731	1	462731	4816627
LYC 2	Lower Yellow Creek	18636	2	463010	4816158
LYC 3	Lower Yellow Creek	18637	3	463811	4816503
LYC 4	Lower Yellow Creek	18637	4	465063	4817530

Swiftwater Field Office - 2(

Site	Hexagon ID	Priority	Survey Deployment Months						# of ARUs (n = 23/5 hex+3floaters)
			March	April	May	June	July	August	
Blue & Gold			Start March 1st						
Doe Creek	18828	1							4
Upper Yellow Creek	18733	1							4
Yellow Butte	18829	1							4
Yellow Creek	18732	1							4
Yellow Trib	18734	1							4
Lower Yellow Creek									3

023 ARU Tracking Chart for NSO Surveys

Date of 1st Deployment	Date Maintenance (battery & SD card change)	Date of 1st Retrieval	Date of 2nd Deployment	Date Maintenance (battery & SD card change)	Date of 2nd Retrieval
5/3/2023		6/15/2023			
6/13/2023					
5/3/2023		6/14/2023			
6/27-29					
6/18/2023					

Comments
Meet ARU Protocol - deploy for 6wks = two deployments per site/hexagon for 3-4 wks
DOC-3 switched ON 6/15

2022-2023 Survey and STOC recordings

All times mark the beginning of the individuals 'grouped' vocalizations unless noted
See Table 1 and 2 for ARU detection summaries in 2022 and 2023

LOCATION	SURV OR STOC DETERMINATION	SURVEYOR STATION, HH RR, MILES FROM ARU

SITE-LOC	SPECIES VOCALIZATION	HH MM SS	DATE

Upper Yellow Creek ARU #1 & 3 detections 3/16/2022

UYC-1 03/16/2022

UYC-1	BUVI at:	19hr 31min 49sec
	Male 4-note at:	20hr 56min 00sec
	Male two series to a 2-note at:	20hr 56min 11sec
	Male one 4-note at:	20hr 56min 36sec
	Male three irregular call/series? to a 2-note at:	20hr 56min 36sec

Reeder, 1924-12, 2057-2108, 1.07miles

DATE	SIT-LOC	VOC						

STOC/SURV	SURVEYOR	STATION	TIME HH MM	MILES	QUALIFIER
SURV	REEDER	1924-12	2057-2108	1.07MI	UNK

NOTES: Was he playing the recording?

UYC-1	SURV	Keller, 1924-04, 2107-2117, questionable, 1.72miles, also not picked up at UYC-3 which is closer.
	Male one 4-note at:	21hr 01min 12sec
	Male two series at:	21hr 01min 20sec
	Male one 4-note at:	21hr 01min 46sec
	Female four ¾-notes at:	21hr 03min 22sec
	Male three ¾-notes	21hr 04min 08sec
	STVA 8-note at:	21hr 04min 43sec
	Seven whistles + 4 barks at:	21hr 05min 49sec
UYC-3	walk-in SURV	Reeder, 1924-12, 1.22miles Bright, 1992-06, 1920-1930, 1.39miles
	BUVI at:	19hr 19min 09sec
	ER one 4-note at:	19hr 21min 30sec

	ER 4-note at:	20hr 00min 59sec
	ER two 4-notes at:	20hr 03min 17sec, 40sec
	ER random hoots:	20hr 05min 58sec
	ER 4-note:	20hr 07min 38sec

Reeder hikes to station 1924-12 (no times recorded but from Kellers start time at station 1924-08 at 2005, assume she drops Reeder off at 1800/1830 (see DOC-5) 1900 and he starts hooting on his way in. Survey at station 1924-12 is from 2057-2108. Reeder walks from 1924-12 to 1804-02, presumably does NOT call post survey from 2108 to 2156. Surveys 1804-02 from 2156-2206, hears whistles (repeated six times), estimates detection point at: 10 N 465613 4818859 from station 1804-02 (azimuth of 171degrees at ~100m), hikes into stand crashes and "left stand" at 2236. UYC-3 to 1804-02 is 0.91miles. Keller surveys station 1924-06 from 2158-2208. Distance from 1924-06 Keller to 1804-02 Reeder is 1.07miles. He could have heard the seven whistles in the recording of Kellers survey. Was there a radio check-in?

UYC-3	SURV	Keller 1924-03, 21:28-21:38, 0.49 miles
	Female four 3-notes at:	21hr 33min 11sec
	7 whistles and 6 barks at:	21hr 35min 38sec
	Ends at:	21hr 36min 32sec

UYC-3	SURV	Keller, 1924-06, 21:58-22:08, 0.73 miles
	Female four 3-notes at:	22hr 06min 03sec
	7 whistles at:	22hr 08min 30sec
	5 barks (very faint) ends at:	22hr 09min 23sec

UYC-4	walk-in SURV	Reeder walk-in to 1924-12, 1.12miles
	ER one 4-note at:	19hr 21min 26sec
	(Document faint, moderate, close "qualifier")	

Doe Creek ARU #5 detections (ARU deployed 3/3/2022) 3/16/2022

DOC-5	walk-in SURV	Reeder walk-in detected by UYC-3 & -4 1921 and 2000 hour, no data card
	ER two 4-notes at:	18hr 33min 01sec**
	ER one 4-note at:	18hr 34min 31sec
	ER one 4-notes at:	18hr 35min 56sec
	ER one 4-note at:	18hr 37min 08sec
	ER one 4-note at:	18hr 43min 13sec
	ER two 4-notes at:	18hr 46min 51sec

Yellow Trib ARU #3 detections 3/16/2022

YET-3	walk-in SURV	Keller, 1992-07, (1730-1930), 0.95mi
	Female four 3-notes at:	18hr 29min 26sec

Yellow Butte ARU #1 detections 4/27/2022

YEB-1	SURV	Wise, Gayner, entire survey: 1900-0022 Wise, Gayner, 2050-2100, 1992-04, 0.73miles
	Male two 3-notes at:	20hr 50min 27sec, 50min 44sec
	Female? four 3-notes at:	20hr 52min 58sec, 53min 15sec, 31sec, 44sec (mod-faint vocalizations)

Cont'd Yellow Butte ARU #1 detections 4/27/2022

YEB-1	SURV	Wise, Gayner, 2111-2121, 1992-03, 0.72 miles Wise, Gayner, entire survey: 1900-0022
	Male three 3-notes at:	21hr 15min 28sec
YEB-1	SURV	Wise, 2131-2150, "1992-??" between -3 and -5 is -12, 0.74miles
		Male two 3-notes and two series to 3 notes at: 21hr 41min 09sec, 15sec, 23sec, 39sec,
	Male two 3-notes at:	21hr 49min 48sec, 54sec
YEB-1	SURV	Wise, Gayner, 2328-2338, 1992-09, 0.31miles
	Male six 3-notes plus one 3-note at:	23hr 28min 26sec, 23hr 29min 46sec (faint)
	Male four 3-notes at:	23hr 31min 33sec (getting closer)

Yellow Butte ARU #1 detections 4/28/2022 Recording in ARU_B&G file

YEB-1	SURV	Wise, walk-in 2021-2100 to 1992-07, 0.19 mile (qualifier)
	SURV	Wise, 2115-2125, 1924-14
	Male two 3-notes at:	21hr 15min 15 sec
	SURV	Wise, Gayner, 2357-0007, 1992-10, 0.39 Miles
	Male four 3-notes at:	00hr 00min 42sec
	Male four 3-notes at:	00hr 01min 00sec

	Male four 3-notes at:	00hr 01min 28sec

Yellow Butte ARU #4 detection 7/1/2022 (6/30 survey)

YEB-4	SURV	Wise, 4659-02, 0007-0017, 1.31miles
	Whistle at:	00hr 09min 57sec (possibly more throughout, VERY faint)
	Male one 3-notes at:	00hr 10min 35 sec (slightly farther)
	Male two 3-notes at:	00hr 10min 52 sec, 11min 09sec (closer)
		Question(s): the direction of the callbox? Wise has a giddy-up in her last note
		Any more surrounding vocalizations?

Yellow Butte ARU #2 detection 7/12/2022

YEB-2	STOC or SURV	Wise, 2252-2302, 4682-04, 1.5miles
	Male three 3-notes at:	22hr 55min 44sec (one distant and two closer)

Yellow Creek ARU #2 detection 4/05/2022

YEC-2	STOC	
	Male 3-note:	20hr 17min 36sec (sound-distance?)
	Male 3-note to two series to two 4-note:	20hr 19min 43sec (moderate)

Yellow Creek ARU #1 detection 4/06/2022

YEC-1	STOC	
	Male two 3-notes:	23hr 09min 51sec, 10min 19sec
		Hoots have a strange echo effect

Yellow Creek ARU #1 detections 4/14/2022

YEC-1	SURV	Bright, 2222-2232, 0391-02, 0.86mi
	Whistle:	22hr 23min 27sec
	Male two ¾-notes:	22hr 24min 17sec
	Male 3-note:	22hr 24min 29sec
	Male three-note:	22hr 24min 53sec
	Whistle:	22hr 25min 00sec
	Three whistles:	22hr 27min 26sec (overall windy)

Yellow Creek ARU #1 detection 7/06-07/2022

YEC-1 SURV Whitt, 0035-0045, 1972-04, 0.73 miles
Male four 3-notes: 00hr 38min 33sec (moving farther away)

Yellow Creek ARU #1 detection 7/13/2022

YEC-1 SURV Wise, 1804-03, 2127-2137, 1.09miles
BUVI present: 21hr 29min 38sec
Male one distant 4-note: 21hr 30min 29sec

Table 1. Summary of ARU detections in 2022

STOC presence	ARU station location	M, F, Juvenile	Date, time
Yes	Yellow Creek sta. 2	M	4/05/22, 20:17
Yes	Yellow Creek sta. 1	M	4/06/23, 23:09

Doe Creek ARU #7 detection 6/14/2023

DOC-7 SURV Reeder, 1992-07, 2136-2147, 0.47miles
STVA before and after STOC recording
Male two 4-notes to two series: 21hr 41min 14sec, 27sec, 39 sec, 50 sec
Male 4-note 21hr 42min 02sec
Male four 4-notes with overlapping juvenile calls plus two notes: 21hr 45min 13sec
Female single high hoot? 21hr 42min 06sec
STVA inspection and faint 8-notes: 21hr 46min 24sec
Male first three notes, then two 4-notes: 21hr 46min 40sec
Male one 4-note: 21hr 47min 58sec
STVA/STOC: 21hr 47min 12sec
(Indistinct calls afterwards)
STVA 8-note, caterwauling, and juvenile calling: 21hr 55min 37sec

Upper Yellow Creek ARU #3 detection 6/15/2023

UYC-3 SURV Reeder, 1992-13, 2232-2243, 1.4 mile
Male two 4-notes: 22hr 35min 08sec, 18sec, 30sec
Male two 4-note and two series: 22hr 37min 42sec
Male 4-note: 22hr 39min 02sec

Female four 3/4-notes (distant): 22hr 41min 08sec

UYC-3 SURV Bankert, 1992-05, 2308-2318, miles? Also notes windy conditions

Female three 4-notes (distant): 23hr 07min 42sec

LEFT OFF HERE 5 MARCH 1330

Yellow Butte ARU #4 detection 5/10/2023

YEB-4 STOC

Male one 4-note: 04hr 20min 00sec

Yellow Butte ARU #4 detection 5/22/2023

YEB-4 STOC

Female three 3-notes: 23hr 32min 58sec
23hr 33min 16sec, 32sec

Barks: 23hr 36min 36sec

Yellow Creek ARU #3 detection 7/27/2023

SURV Mowdy, HM, 1972-06, 2246-2256, 0.6 miles

Male four 3-note: 22hr 48min 50sec

Yellow Creek ARU #3 detection 8/03/2023

STOC/SURV1? Mowdy, 1980-13, 2133-2143, 3.8 miles

Male one 3-note: 22hr 23min 40sec

Table 2. Summary of ARU detections in 2023

STOC presence	ARU station location	M, F, Juvenile	Date, time
Yes	Yellow Butte sta. 4	M	5/10/23, 04:20
Yes	Yellow Butte sta. 4	F??	5/22/23, 23:32
~~Yes~~	~~Yellow Creek sta. 3~~	~~M~~	~~8/03/23, 22:23~~

ARU ID	non-survey vocalization (Y/N)	Unique script
**daylight savings time (add an hour) takes place ?? March 2022 and IS NOT accounted for on the SM4's unless you change the location upon deploym		
DOC-3	N	SURV1 3/15 at 2000 TONE, 2100 TONE recordings contain WHIS, BARK and TON
DOC-5	N	walk-in SURV1
	N (map)	Suspect SURV1
	N	SURV1
	N (map)	SURV1 plus TONE
DOC-6	N	SURV1 3/15/22 at 2029 TONE, ARU tracking sheet states "Battery, SD card maint
DOC-7	N	three very indistinct four-note calls, male
DOC-8 (coordinates?)	N	SURV1 Female 4 three-notes
	N	SURV1 four three-notes, female
	N	SURV1
YEB-1	Maybe (map)	SSS-2 juvenile Am. Goshawk, no survey at 2000, two three-note male
	N	slide 8/11, two three-note to two-series calls male
	N	slide 5&6/11 7x three-notes male, plus 4x three-notes female
	N	SURV1 4 three-notes male; STRANGE call with slight variation Wise survey
	N	SURV1 4 three-notes female
	N	walk-in Survey, one distant three-note, male, with echo; possible survey 4 minut
YEB-2	N	SURV+WALK-IN; 4 three-notes, faint develops into closer four-notes and WHIS a
	Yes (map)	Two three-notes female
	N (map)	SURV1+TONE+COREWALK
	N	SURV1+walk-in
	N	sounds like a SURV1, distant single 3 three-notes
YEB-3	N	NONE
YEB-4	Maybe (map)	SURV1 Very faint four 3 three-notes, WHIS SLIDE 3/11 at 09:57 (TOPO ANALYSIS)
	N	SURV1 multiple faint 3/4-notes CALLS, MALE, one four note was spaced out susp
YEC-1	YES	4 three-note male, faint
	N	SURV1 4 three-notes with one WHIS; sounds like a recording look at Kaliedoscop
	YES (map)	4 three-notes (female, Liz confirm) (needs topographical analysis 1803-07 to YEC
	Y?	distant four-note?, male
YEC-2	YES	five four-note distant, male
YEC-3	N	NONE, STVA, STVA_IRREG, INSP
YEC-4	N	VERY AUDIBLE SURV1, four-notes, three-notes, series, WHIS, plust TONE
	N	SURV1 four three-notes

UYC-1	N	SURV1 4 three-notes with WHIS's
UYC-1	N (map)	SURV1 4 three-notes very faint almost lost two middle notes
UYC-1		
UYC-1	N	three-notes plus WHIS
UYC-1	N	two-middle notes only (Liz review; need more vocalizations, dog? Looks like a CC
UYC-1	Yes	three 3-note female, followed by a single three-note male
UYC-1	Yes	three-note male
UYC-2	N	SURV1
UYC-3	N (map)	SURV1 Wise/Whitt 3/16 survey start 1850-2127, AND Keller at sta 1992-07 walk
UYC-3	N	SURV1
UYC-3	Yes (map)	SURV1 distant female 4 three-notes; male 4 note at 21:01
UYC-3	N	SURV1 4 three-notes, with WHIS, BARKs, slide 1/6 three-notes, WHIS, BARKs, slic
UYC-3	N	SURV1, distant three-notes
UYC-3	N	SURV1, distant 3-notes
UYC-3	N	SURV1 Female 4 three-note
UYC-3		
UYC-4	N	SURV1 cadence of notes sounds like a surveyor
YET-1	N	SURV 4x three-notes
	N	SURV (male and female 3/4 note hoots)
	Y	STOC faint first note and audible two-middle notes, distant overall
YET-2	N (map)	DOE SURV, four distant three-note calls, male
	N (map)	
	N (map)	5 three and four-note calls, distant with echo
	N	indistinct hoot--Liz review
YET-3	N	SURV1
	N	SURV1
		indistinct hoot--Liz review
	N	SURV
		strange mammal_hoot?

Date and time of detection	Miles from ARU to sta.	Surveys performed that date, survey	Start and end surve
ent			
3/15 2000,2100		Doe Creek C. Bright 3/15 at 2000 TONE, 2100 TONE SURV1 recordings c	
3/16 1800,1900,1936,2036	0.5 miles	Yellow Butte Bright partial corewalk	1807-2018
5/24 2100	1.36 mi from DOE5 to 1992-07 Yello	Yellow Butte sta 1992-07 survey time 2041-20	2051-2109
5/24 at 2200	1.43 DOE-5 to 1924-14 UYC	Upper yellow Creek	2202-2212
5/24 at 2300	1.57 mi DOE-5 to 1924-03	Upper yellow Creek	2259-2309
3/15, 3/16 at 1800		SURV1 3/15/22 AT 2029 WITH TONE; ARU tracking sheet states "Battery	
5/24 at 0000 (survey 5/23 past midnight)		possibly 5/24 Upper Yellow Creek sta 1924-10	2353-0003
3/16 at 1800		Yellow Butte Bright partial corewalk	
5/24 at 2000		Yellow Butte 5/24	2020-2109
5/25 at 2300		Yellow Butte 5/25 (data follows)	2247-2300
4/27 at 2000	1.06 mi to coordinates; YEB1 to 199	Yellow Butte 4/27	1900-2000 walk-in to sta
4/27 at 2100	0.74 mi	Yellow Butte 4/27	2050-2100
4/27 at 2300	0.54mi	Yellow Butte 4/27	2257-2307
4/28 at 0000 (4/27 survey past midnight	0.39 mi	Yellow Butte 4/27	2357-0007
4/28 at 2000 (slide 8/11)	0.19mi	Yellow Butte 4/28	2021-2100
4/28 at 2100 (slide 3/11)	0.19mi	Yellow Butte 4/28	2021-2100
6/22 at 2300		6/22 at 2300, Doe Creek sta 1804-13 2302-231	2302-2312
7/12 at 2200 (slide 10/11 at 22:56)	1.50mi	Marsh Trib	2252-2302
7/13 at 2300 (slide 9/11)	YEB2 to Yellow Butte 1992-09 at 0.0	Yellow Butte	2259-2309
7/14 at 0000 (survey 7/13 past midnight	0.08miles	(see Yellow Butte) Upper Yellow Creek	2346-0028
7/14 at 0100 (survey 7/13 past midnight	.41 mi from YEB2 to Yellow Butte sta	Yellow Butte 7/13	0039-0049
NA			
7/01 at 0000 slide 2/11 00:10 (see 6/30	1.29 miles 1916-07 to YEB4 OR 1.30	See Yellow Trib 1.30 miles 4659-02 0007-0017, Balckberry Canyon 1916	
7/06 at 2100	0.36 from YEB4 to Rice Flat 1987-07	RICE FLAT survey 7/06 C. Bright; North Martin,	2100-2111
4/06 at 2300, 09:51 slide 2/11			
4/14 at 2200	0.86 miles from Yec1 to 0391-02 sur	Yellow Creek 4/14	2147-2158, 2202-2213
7/07 at 0000 (look at 7/6 for surveys) 00	2.65 from Yec-1 to 2051-03 (Brush H	Upper Martin Creek ~~1803-07, 0005-0015~~, ~~1.35~~	(see upper martin) 2347
7/13 at 2100 30:29 slide 3/6	1.09 mi Yec-1 to 1804-03	Doe Creek, Wise	2054-2104
4/05 at 20:17		None	
NA		None	
7/14 at 0000 (7/13 survey midnight)		Yellow Butte (measure distance)	2352-0002
7/14 at 0100 (7/13 survey midnight)	.76 mi YEC4 to 1924-10	Doe Creek 7/13 sta 1924-10 0055-0105	0055-0105

6/24 at 0000 (6/23 midnight survey)	.2 miles	Upper Yellow Creek	2357-0007
6/23 at 2300 (slide 1/11)	0.60 miles from UYC1 to 1924-10	UPPER YELLOW CREEK, WHITT	2300-2310
		YELLOW CREEK, WISE/WHITT	2256-2306
6/23 at 2100	1.08 UCY1 to 1924-12	UPPER YELLOW CREEK, WISE	2100-2110
3/26 at 1900		X	
3/16 at 2100 (21:01 slide 1/11)	2.76 miles	YELLOW BUTTE, WISE/WHITT	2052-2102
3/16 at 2000 (20:56 slide 10/11)		YELLOW BUTTE, WISE/WHITT	2052-2102
3/16 at 2000	2.9 miles	YELLOW BUTTE, WISE/WHITT	1959-2012
3/16 at 1900 (slide 2/6 19:21)	UYC3 to 1992-06 1.36mi; UYC3 to 19	Yellow Butte, Keller walk-in	1730-1930
3/16 at 2000		YELLOW BUTTE, WISE/WHITT	1959-2012
3/16 at 2100 (M slide 1/6); 2133 (slide 3	2.40mi UYC3 to 1992-01; 2.47 mi UY	YELLOW BUTTE, WISE/WHITT	2052-2102
3/16 at 2200	1.3 miles in-line across drainage	Upper Yellow Creek	2156-2206
6/23 at 2100	1.0 miles in-line across drainage	UPPER YELLOW, WISE	2100-2110
6/23 at 2200	0.9 miles	DOE CREEK, WISE	2158-2208
6/23 at 2300	0.6 miles	UPPER YELLOW CREEK, WHITT	2300-2310
	1.5 miles in-line across drainage	YELLOW CREEK, WISE/WHITT	2256-2306
3/16 at 1900	1.7 and 1.8 miles	YELLOW BUTTE, WISE/WHITT	1850-2028
7/14 (see 7/13 survey) at 0100 (slide 9/11 01:52)			
7/14 (see 7/13 survey) at 0200 (slide 3/11 02:14 TONE)			
7/28 (see 7/27 survey) at 02:14			
8/2 at 23:59 slide 11/11	2.09 mi	Doe Creek 8/2	2354-0004
8/3 (see survey 8/2) at 00:56	2.29 mi	Doe Creek 8/3	0053-0103
8/3 (see survey 8/2) at 02:00.08	1.89 mi	Upper Yellow Creek 8/2 or DOE creek 1804-03	0140-0240
8/3 2300			
3/9 at 1800 (slide 10/11 18:52)	YELLOW TRIB survey WISE 4659-09 (	Yellow Trib survey (multiple surveys this night	1852-1902
3/9 at 1900 (slide 1/11 19:00.31)	0.16 mi		1852-1902
3/10 at 0400			
3/16 at 1800			
3/20 at 1700			
4/17 at 1900			

Station number
ontain WHIS, BARK and TON
on way to 1992-06
1992-07
1924-14
1924-03
y, SD card maintenance" on 3
sta 0803-04
walk-in to 1992-07
1992-02
1992-11"??" record quoted
1992-04
1992-01
1992-10
1992-07
1992-07
1804-13
4682-04
1804-07
1992-09
1992-02
-07 0005-0015
1987-08
0391-01, 0391-03
9069-05,9069-08
1804-12
1992-09
1924-10

1924-06
1924-10
0391-02
1924-12
1992-01
1992-01
1992-10
1992-07
1992-10
1992-01
1804-02
1924-12
1804-?
1924-10
0391-02
1992-09, 1992-10

1804-11
1804-02
1924-12 (walk-in)
4659-09
4659-09

Site-Station	Hexagon ID	Validator	QC (Y/N)	STOC presence
Blue & Gold				
DOC-3				NO
DOC-5				NO
DOC-6				NO
DOC-7				NO
DOC-8				NO
YEB-1				unk
YEB-2				unk
YEB-3				NONE
YEB-4				unk
UYC-1				NO
UYC-2				NO
UYC-3				NO
UYC-4				NO
YEC-1				NO
YEC-2		LKC		maybe
YEC-3				None
YEC-4				No
LYC-1				
LYC-2				

STOC notes/vocalizations detected	Date, location and surveyor initials of local call-back surveys
3/15 at 2000 TONE, 2100 TONE SURV1 recordings contain WHIS, BARK and TONE only	3/15 at 2000 TONE, 2100 TONE SURV
3/16 ER SURVEY 1800, 1900 (two-middle notes heard, probably ER), 1936, 2036, Doe Creek data card ER 3/16 notes a contact call at 2206 (none of his ho	
SURV1 3/15/22 at 2029 TONE, 3/16 1800; SURV1_ER	None
SURV1 3/15/22 AT 2029 WITH TONE, 3/16 AT 1800 SURV1+ER; 5/24 at 0000 three very indistinct four-note calls, Up	None
SURV1 3/16/22 AT 1800 WITH NO TONE; SURV1? 5/24 AT 2000 (NO SURVEYS); 5/25 STOC AT 2300, Yellow Butte 1992-02 2247-2300, with STVA (STVA als	
4/27 AT 2000, 2100, 2300, CALL BACK SURVEY YEB 1992-?? (466758, 4819991), 1992-04, 01; 4/28 AT 0000, 2000, STOC? 2100	
SURV1 +STOC? +COREWALKS, LOTS OF DISTANCE ON ARU	
NONE	
SURV1? 7/01, 0000; SURV1 7/06 AT 2100	
SURV1 6/24 AT 0000, 6/23 AT 2300, 2100; 3/16 at 2100, 2000	
3/16 SURV1 AT 2000, PLUS ER_SURVEY	
3/16 SURV1 at 1900, 2000, 21000, 2200; SURV1 6/23 2200, 2300	
3/16 SURV1+ER AT 1900	
4/06 survy1 2300	
2 series, 2 three/four-notes, 4/05 at 2000	whipple haven, brads trib
None	
4 three/four-note calls 7/14 at 0100; closest survey C.Bright Martin Trib?? 7/14 sta 3904-03 2309-0009; other locationsEAgles View Little Wolf Trib, Maup	

Juvenile notes	STVA vocalization dates	Presence of BRMA, CALU, raptors

V1 recordings contain WHIS, BARK and TONE only; possible survey areas are
oting is heard by ARU, but ER DETECTs a female in the area that he was una

so heard on ARU)

NOGO? 4/27 AT 060

STVA_IRREG and INSP calls found in STOC folder

oin Road surveys on 7/14

Site-Station	Hexagon ID	Validator	QC (Y/N)	STOC presence
Blue & Gold				
DOC-3	18828	LKC	Y	NO
DOC-5	18828	LKC	Y	NO
DOC-6	18288	LKC	Y	NO
DOC-7	18288	LKC	Y	YES
YEB-1	18733	LKC		NO
YEB-2	18733	LKC		NO
YEB-3	18733	LKC		NO
YEB-4	18733	LKC		**YES**
UYC-1	18829	LKC		NO
UYC-2	18829	LKC		NO
UYC-3	18829	LKC		**YES**
UYC-4	18829	LKC		NO
YEC-1	18732	LKC		survey with no tone
YEC-2	18732	LKC		NO

YEC-3	18732	LKC	YES
YEC-4	18732	LKC	NO
LYC-1	18637	LKC	NO
LYC-2	18637	LKC	NO
LYC-3	18637	LKC	NO
LYC-4	18637	LKC	NO

STOC notes or additional vocalizations (juveniles) detected
SURV1, ER voice6/15 at 2202; 7/24 three three-notes
SURV1
SURV1
STOC AND SURV1
no clear SURV1 heard; STVA & STVA_IRREG
SURV1, HW in Yellow Butte deploying ARU, SURV1+ER
SURV1
5/10 STOC one 4-note; 5/22 a female STOC at 2239, two three-note v
SURV1? Distances do not match up, difficult to hear ticking malfunctic
SURV1
6/15 male 4-note 9 vocalizations, 6/22 SURV1 in UYC 1924-01
INDISTINCT
SURV1; this night is FULL of survey recordings
SURV1

STOC 4 sets of 3-note
None
None
SURV1
SURV1
SURV1

Date, station, surveyor initials and time of local call-back surveys
6/15 (Yellow Butte, ER deploying, set of 3 four note calls); 7/24 (Yellow Creek, CB, MW at 2144 station 1992-04 (0.28mi))
5/3 (Bear Creek, Upper Yellow Creek 2017, 2117), 6/15 (yellow butte, 2155, 2255)
5/3 (Upper Yellow Creek (1924-10? 2213-2223), Bear Creek ((recording error? In between surveys)), 2217), 6/15 ER core walk calls 2 four-notes at 1956 (deploying at Yellow Butte ARU sta?)
5/3 (Bear Creek/Brush Headwaters/Doe Creek, 1922, 2022, 2122), 6/14 adult STOC and juv_strix (NO SURVEYS AT 2056) ALL ARE LATER: Y. Butte 2136, Upper Little Canyon 0009, Yellow Trib 2240, McGee 2239, 6/15 (yellow butte, 1956); NOT Little Upper Canyon survey starts at 2308 in area and survey stations starts at 0009
5/17 Snail Canyon SURV1 (STVA_INSP possible response); STVA 5/20
5/3 YEB corewalk HW 1917 female 3-notes with whistles, 2017, 2117, 2217, 5/04 2218; 5/4 Rice Flat 1987-02 2212-2222 ER
5/3 Upper Yellow creek survey by MW at 1924-10 survey began at 2213; 5/4 Yellow Butte MW at 2018 station 1992-07; Gallagher Ridge 9107-06 CB 2115 2125; Rice Flat 1987-02 ER 2212-2222; Upper Yellow Creek MW surveying at 2118 at station 1924-02
STOC (faint MALE 1x 4note) 5/10 @ 0355; checked North Martin II survey but it ended at 0218; 5/22 ARU picks up call (??) at 2239 (adjustment 23hr 32min; NOT Upper Yellow Creek 5/22 CB, HM SURV 2403-2413 at sta. 1924-12 (miles?); NOT Yellow Trib 5/22 survey time starts at 2330-2340 sta 1987-01(0.4mi, no time overlap); TOO FAR 5/22 Snail Canyon MW surveys station 9069-10 at 2236-2246 (2.6 miles) **(total nights of detections=2); STVA_IRREG PAIR CALLS, POOR WHIS-LIKE CALLS, 5/5, 5/7, 5/13-14,5/19,5/20,5/22**
6/15 YEB sta 1992-01, 1804-14 survey time 2156-2206 (-14 "too windy to survey did not use tone")
6/14 Yellow Trib survey sta. 4659-02 survey by ER at 2259-2309
see if ER was deploying in DOE CREEK) 6/15 Yellow Butte survey by CB at station 1992-01 (2.4mi) starting at 2156-2206, ARU picks up calls at 2200 and 2300 (STOC male), in between CB's sta's 1992-02 (2.6mi) and -05 (2.5mi), CB stopped survey "too windy"; 6/22 Snail Canyon MW at sta. 1980-11 (4.2mi) survey time 2303-2313, error in scanning cards for 6/22 and SURV1 was UYC. ARU detects calls as 2300 has an echo; **(total nights of detections=1)**
6/27 4-note at 2200, very distant, no surveys in this area on this date
6/29 Yellow Martin surveyed sta. 4055-01 (1.0mi, ridgetop) by MW at 2149-2159 full survey+TONE; 7/27 Bear Creek JM/HM 1972-06 (0.63mi)survey starts 2246-2256, ARU detects owls calls at 2242; 8/2 Yellow Creek ARU detects at 2235, surveyor starts at 2236-2246 B. Gill sta. 0391-08 plus full survey+TONE (1.02mi ridgetop); 8/10 Yellow Creek surveyed by HM at sta. 0391-04 (1.14mi, ridgetop to ridgetop) start survey at 2025; Upper Yellow Creek 1924-12 start time 2026 CB&McKinley; Snail Canyon at sta 1980-04 start time 2023; female 3-three-note calls, some of survey+NO TONE, ARU picked up calls at 2025
7/27 Bear Creek ARU picks up call at 2242, surveyor JM/HM broadcasts call at 2246 sta 1972-06; 8/2 Yellow Creek sta 0391-02 surveyed by B. Gill starts calling at 2037-2047, ARU picks up calls at 2035

7/27 ARU detects 4 sets of three-notes 2242 and WHIS at SPEC 8:47; 7/27 Bear Creek surveyors JM/HM survey sta 1972-06 2246-2256 (0.6MI; need TOPOGRAPHY ANALYSIS); 8/03 Yellow Creek one three-note call on ARU 2134; Snail Canyon surveyor JM at sta. 1980-13 2133-2143 (TOO FAR, 3.8MI); Blackberry Canyon B Gill sta1916-08 survey time 2134-2144 (too far 4.97mi); and STVA present at 2134 **(Total nights of detections = 2)**
None
None
7/27 Marvin Gardens survey starts at 2041 two three-notes (time approx. 1942, daylight savings?); 8/10 Upper Yellow Creek HM sta1972-12 2124-2134 survey, three 3-notes recorded on ARU at 2125
8/2 Yellow Creek B. Gill at sta. 0391-01 at 2134-2144; 8/10 Yellow Creek HM at sta 1972-12 at 2124-2134, ARU records at 2125
8/2 Yellow Creek ARU2035, surveyor B. Gill at sta 0391-02 starts at 2037-2047; 8/10 Yellow Creek surveyor B. Gill at sta 0391-04 starts at 2023-2035 , ARU2025

Juvenile Notes	STVA vocalization dates
	7/12 heavy vocalizations and July, intermitent other dates
	05/03-06/18, consistent presence
6/1 AT 2147 BEG with distant INSP	5/4-6/12 STVA & INSP; 5/6 AT 0500 adult STRIX_IRREG+WHIS caterwauling and w
6/14 2056 BEG detected during call-box survey with overlapping STOC calls, juvenile possibly responding to adult strix	5/03-6/14 STVA; 5/3-6/7 STVA_IRREG
	5/5-6-14 STVA presence consistent
	7/27, 08/03
None	5/4-6/18 STVA, 5/17 STVA_WHIS male and female dueting, a flat "WHIS" call duri
5/24 Begging (BEG) overlap with STVA male series and female location calls	5/5-6/19 STVA; STVA_WHIS middle to end of May
	6/14,15,16,17,29; 07/09,12,24
	6/16 heavy vocalizations
	7/24 busy; plus more…
	7/24, 13 heavy vocalizations plus more
	6/29; 7/05,12,16,24,27; 8/02,8/08
	7/2,8,12,20,24,27; 8/2,3,8

	6/29,7/07,12,24,27; 8/02,03
	07/24/23
	7/20-8/20
STRIX_JUV 8/16,19 suspect barred, vocalizations are transitioning from BEG into barred owl locations calls	7/20-8/30 STVA
7/21 (2248)-7/22 BEG two offspring no adult STVA recordings in this segment although they were present earlier at 2048 7/21 using the 8-note call	STVA 7/20-8/25
	7/20-8/30 fewer days of presence

Presence of BRMA, CALU, raptors	False-positives verfified (actual sp.)	Other owl species detected
None		MEKE, GLGN, STVA
None		BUVI, GLGN, MEKE, STVA
None		BUVI, GLGN, MEKE, STVA
None		AEAC, GLGN, STVA
None		GLGN, MEKE?, STVA
None		AEAC, BUVI, GLGN, MEKE, STVA
None	ORPI (COBR)	AEAC, GLGN, STVA
BUJA (6/11)	WHIS (STVA_WHIS)	AEAC, BUVI, GLGN, MEKE, STVA
None		BUVI, GLGN, MEKE, STVA
None		BUVI, GLGN, MEKE, STVA
None		MEKE, GLGN, STVA
None		GLGN, STVA
CYST_BUJA		BUVI, MEKE, STVA
NONE	OCPR (BUVI_IRREG)	BUVI, GLGN, MEKE, STVA

None		BUVI, GLGN, MEKE, STVA
None		AEAC, BUVI, GLGN, MEKE
None	DOG, DRPU, FROG AND PHNU (INSECT), BUVI (COW), STOC (S	BUVI, GLGN, MEKE, STVA
None	DOG, DRPU, FROG AND PHNU (INSECT), BUVI (COW), STOC (S	BUVI, GLGN, STVA
Raptor	BUVI, FROG, PHNU (INSECT)	AEAC, BUVI, GLGN, MEKE, STVA
None	SURV1 (ORPI), BUVI (INSECT)	AEAC, BUVI, GLGN, MEKE, STVA

Notes	Additional folders visually scanned	Uploaded to H: drive (Y/N)
HYPI		Y
BUVI 5/7, GLGN 5/4-6/9; MEKE 5/3-5/16; HYPI		Y
stopped dating other owl sps	GLGN, PECA	Y
GLGN 5/04-6/14, AEAC 5/03-5/08	CALU	Y
AEAC 5/04-5/08, GLGN 5/06-6/04	STVA_IRREG	Y
AEAC 5/05-5/14, BUVI 6/13, GLGN 5/04-6/07	PECA	Y
	FROG, ORPI,	Y
	BUVI, INSP, STVA, STVA_IRREG	Y
pileated present, BUVI 6/15-7/14, GLGN 6/20-7/	INSP, PECA	Y
BUVI present only 6/15	PECA	Y
PECA_BUJA(BUJA immitation)	PECA	Y
		Y
	BUVI, INSP, PECA	Y
		Y

	PECA	Y
		Y
distant, echoy STVA in STOC folder	DOG, INSP, PHNU	Y
Bobcat? in CALU 8/22; STRIX_JUV in DOG	and NOISE from nearby trucks in STO	Y
Coopers hawk in CALU 7/30	INSP	Y
STRIX_JV in WHIS folder		Y

Misc				
NOM		LKC		NO
BEC		LKC		NO

SURV1
NONE

Myrtle view? Yellow Martin? Umpqua Overlook? Marvin Gardens? 7/27; Flagler Creek? Martins Trib? Rice Flat? Rockadile Overlook? 7/31; North Martin? Maupin Road? Gallagher Canyon? Eagles View? Big Tom? 8/09
NONE

	Very little STVA presence 7/25-8/06
	07/24-8/8 very little stva vocalizations

None	FLY (INSECT)	BUVI, GLGN, STVA
None		BUVI, GLGN, STVA

		Y
		Y

Area anc	non-survey	Unique script
**daylight savings time (add an hour) takes place 12 March 2023 and IS NOT accounted for on the SM4's		
DOC-6		
DOC-7	N	three very indistinct four-note calls, male
DOC-8	Y	STOC? four three-notes, female
	N	SURV1
YEB-1	Y	SSS-2 juvenile Am. Goshawk, no survey at 2000, one three-note STOC
	N	slide 8/11, brief series to a three-note
	N	slide 5&6/11 7x three-notes male, plus 4x three-notes female
	N	STOC? 4 three-notes female; STRANGE call with slight variation (Liz review)
	Y	STOC? 4 three-notes female
	Y	STOC one distant three-note, male, with echo; possible survey 4 miuntes earlier than
YEB-2	N	SURV+COREWALK; 2 four-notes faint develops into closer four-notes and WHIS, Wise
	Y	SURV1? Two three-notes
	N	SURV1+TONE+COREWALK
	N	SURV1+walk-in station?
		SURV1 3 three-notes
YEB-3		NONE
YEB-4		SURV1? Very faint 3 three-notes
		multiple faint 3/4-notes with WHIS
UYC-1		4 three-notes with WHIS's
		4 three-notes faint
		three-notes plus WHIS
		two-middle notes only
		three-note
		three-note
UYC-2		SURV1+ER
UYC-3		SURV1+ER
		SURV1, distant three-notes
		SURV1, distant 3-notes
		Female 4 three-note
UYC-4		SURV1+ER
YEC-1		3 three-note, faint
		SURV1? 4 three-notes with one WHIS
		4 three-notes
		distant four-note
YEC-2		five four-note distant, male
YEC-3		NONE, STVA, STVA_IRREG, INSP
YEC-4		VERY AUDIBLE SURV1, four-notes, three-notes, series, WHIS, plust TONE
		four three-notes
YEB-4		SURV1? Very faint 3 three-notes
		multiple faint 3/4-notes with WHIS
UYC-1		4 three-notes with WHIS's
		4 three-notes faint

	three-notes plus WHIS
	two-middle notes only (Liz review)
	three-note
	three-note
UYC-2	SURV1+ER
UYC-3	SURV1+ER
	SURV1, distant three-notes
	SURV1, distant 3-notes
	Female 4 three-note
UYC-4	SURV1+ER

Date and time	Tone (	Daylight savings time	NOT these SURVEYS
5/24 at 0000	Y		
5/24 at 2000	N	ARU starts recording 3/1 at 1800, sunset 170	NOT Upper Yellow Creek 5/24 star
5/25 at 2300	N		
4/27 at 2000	N	ARU starts recording 4/7 at 1900, schedule, s	NOT Marsh Trib 1620-1800, NOT M
4/27 at 2100	N		
4/27 at 2300	N		
4/28 at 0000 (4/2	N		NOT Upper Yellow Creek, Wise, 21
4/28 at 2000			
4/28 at 2100			
6/22 at 2300	N	ARU starts recording 4/05 at 1900, schedule	1900-0600
7/12 at 2200			Not Marsh Trib 2216-0021
7/13 at 2300	Y		
7/14 at 0000			NOT Martins Trib 7/14, C. Bright st
7/14 at 0100			
NA		ARU starts recording 4/05 at 1900, schedule	1900-0600
7/01 at 0000		ARU starts recording 4/26 at 1900, schedule	1900-0600
7/06 at 2100			
6/24 at 0000	N	ARU starts recording at 3/10 0000, schedule	1700-0700; sun sets 3/01 at 1707
6/23 at 2300			
6/23 at 2100			
3/26 at 1900			
3/16 at 2100			
3/16 at 2000			
3/16 at2000		ARU starts recording at 3/10 0000, schedule	1700-0700; sun sets 3/01 at 1707
3/16 at 1900		ARU starts recording at 3/14 1800, schedule	1800-0700; sun sets 3/01 at 1707
6/23 at 2100			
6/23 at 2200			
6/23 at 2300			
3/16 at 1900		ARU starts recording at 3/10 at 1721, schedule is	1700-0700, sun sets 3/01 at 17
4/06 at 2300		ARU starts recording 3/29 at 1800, schedule (	Not N. Martin corewalk 1500-1730
4/14 at 2200			
7/07 at 0000			Not Bear Creek 2238-2318, Whitt;
7/13 at 2100			
4/05 at 2022		ARU starts recording 3/23 at 1845, schedule (	NOT Whipples Haven 1640-1808, M
NA		ARU starts recording 3/23 at 1800, schedule	0700-1800
7/14 at 0000		ARU starts recording 3/23 at 1800, schedule	0700-1800
7/14 at 0100			NOT Eagle View 2030-2234
7/01 at 0000			
7/06 at 2100			
6/24 at 0000	N		
6/23 at 2300			

6/23 at 2100
3/26 at 1900
3/16 at 2100

3/16 at 2000

3/16 at 2000

3/16 at 1900
6/23 at 2100
6/23 at 2200
6/23 at 2300

3/16 at 1900

Surveys performed that date, surveyor	Start and end survey time
SURV1 3/15/22 AT 2029 WITH TONE, 3/16 AT 1800 SURV1+ER; possibly 5/24 Upp	2353-0003
NONE	
Yellow Butte 5/25 (data follows)	2247-2300
Yellow Butte 4/27	1900-2000 walk-in to station
Yellow Butte 4/27	2050-2100
Yellow Butte 4/27	2257-2307
Yellow Butte 4/27	2357-0007
NONE	
Gallagher Canyon A 4/28, Whitt	2104-2114
Yellow Creek 6/22 at 2300, Bright 1945-0102 with walk-in	2256-2306
Doe Creek	2259-2309
a. 3904-03 2359-0009	
Martin's Trib	0110-0120
07	
); Rookery corewalk 1211-1330	
Yellow Creek 4/14	2147-2158, 2202-2213
Snail Canyon; Brush Head Waters 7/7 0008-0018 (later than ARU), sta 2051-03	2347-2357, 0001-0011
Doe Creek	2054-2104
NOT Western Cougar 1050-1422, (dayhike), Brads Trib 1838-2016	
Martins Trib 7/14, C. Bright	2359-0009
possible Martins Trib 7/14, time recorded incorrectly???	0110-0120??? Later than ARU
X	
NORTH MARTIN, J. WHITT	2057-2107
NORTH SADDLE, VACA	2058-2108
RICE FLAT, C. BRIGHT	2100-2111
X	
UPPER YELLOW CREEK, WHITT	2300-2310

YELLOW CREEK, WISE/WHITT	2256-2306
UPPER YELLOW, WISE	2100-2110
X	
UPPER COUGAR CREEK, VACA	2055-2105
YELLOW BUTTE, WISE/WHITT	2052-2102
RIVERVIEW, VACA	1956-2006
YELLOW BUTTE, WISE/WHITT	1959-2012
RIVERVIEW, VACA	1956-2006
YELLOW BUTTE, WISE/WHITT	1959-2012
X	
UPPER YELLOW, WISE	2100-2110
DOE CREEK, WISE	2158-2208
UPPER YELLOW CREEK, WHITT	2300-2310
YELLOW CREEK, WISE/WHITT	2256-2306
X	

Station number	X	Y	Column1
sta 0803-04			
1992-02			
1992-"??" record quc	466758	4819991	
1992-04			
1992-01			
1992-10			
GC-06			
0391-02			
1804-07			
3904-06			
0391-01, 0391-03			
9069-05,9069-08			
1804-12			
3904-03			
3904-06			
4661-08			
0240-07			
1987-08			
1924-10			

0391-02		
1924-12		
1805-05		
1992-01		
0281-07		
1992-10		
0281-07		
1992-10		
1924-12		
1804-?	46590,	4819481
1924-10		
0391-02		

Rookery						
Activity Center 0392 tree	LKC		A	SM mini #8 (SMA05328)		
Ridge west						
Downslope east						
Lower Tom Folley						
LTF-O1	LKC	06/10/24	LTF-O1	SM mini #3 (SMA04809)	458216	4836964
LTF-O2	LKC	08/06/24	LTF-O2	SM mini #8 (SMA05328)	458592	4837106

	MM		LKC			
	01 E		LKC			
	R		LKC			
	NN	th of Original Activity ce	LKC	10/1/24		
	WW	; valley of main road ster	lkc	10/1/24		

Yellow Creek ARU recordings of call-back surveys

Yellow Creek 1	07/27/2023	2242	
		STOC detection start offset 228, 1/11 slides	
		Call sequence:	Male 5 four-notes + 1 four-note
			Female 2xthree-notes, 1xfour-note, 1xthree note
			+ 5 WHIS, 5 BARKS immediately followed by male 2xfour-notes with possible car noise (to indicate surveyor)
			Slide 6: 3xfour notes male
			4xthree-notes female
			4xthree-notes female
Yellow Creek 2	07/27/2023	2242	offset____, _____slides
		STOC detection	
		Call sequence:	2 three-notes, 1xfour-note, 1xthree note
			5 WHIS, 5 BARKS
			Car noise
Yellow Creek 3	07/27/2023	2242	offset 408, 2/11 slides
		STOC detection	
		Call sequence:	4xthree-notes (faint) plus indistinct calls
			1 WHIS (VERY faint)

Area and ARU number	non-survey vocalization (Y,	Vocalization Script
DOC-7	Y	slide 8/11 at 41:14 2 four-notes plus two series plus
YEB-4	Y	four-note, distant with echo
	Y	four distant three-notes, male (liz review)
UYC-3	Y(map)	4x four-note faint, 2 faint three-notes plus two serie
	Y(map)	4x three-notes
	N	SURV1 female 4 three-notes
YEC-3	Y (SURV 4 minutes late)	4 three-note calls, male
	Y	one three-note, male

Date and time of detection	Miles from ARU to sta.
6/14 at 2056, slide 8/11 at 41:14 and 45:12	
5/10 at 0355	
5/22 at 2239, slide 10/11 three-note starts at 22:53 BARK 22:57	
6/15 at 2200 41:03; male 4 four-notes slide 7/11 at 35:17 and 4 four-notes plus two series at 37:15	to 1992-05 is 2.47 miles and 1992-14 i
6/15 at 2300 07:35 slide 2/11	
6/22 at 2300, 05:04 slide 1/11	
7/27 at 2242, faint to closer	
8/3 at 2134	

Surveys performed	Start an	Station	X	Y	Column1
Snail Canyon 1980-02 (1.89mi) and Andrews Creek 9069-11 (2.37 mi) Wind is 2.78 miles	2231-2235 at 1992-14; 2308-2318 at 1992-05				
Upper Yellow Creek 1924-01 survey time 2301-2312 (0.41mi)					
Bear Creek 7/27 1972-06 survey time 2246-2256					

Location	Sta	ARU	Date	Detection Time (s)	Offset
DOC09	3		3/15/2023	200002, 37:48-39:10	
			3/15/2023	200002, 40:14-40:20	
DOC09	5		3/16/2023	180000, 33:01-34:37	
	5		3/16/2023	180000, 33:01-34:37	1980, 1992, 20
	5		3/16/2023	180000, 35:56-37:13	2148
	5		3/16/2023	190002, 05:22-05:25	312
	5		3/16/2023	193647, 21:15-21:21	1272-1440
	5		3/16/2023	193647, 26:49-26:57	1452
	5		3/16/2023	193647, 24:11, 26:33-26:57	1854
	5		3/16/2023	193647, 24:08, 26:26-2649	1740
	5		3/16/2023	193649, 29:07-29:32, 30:47-30:52	1752, 1764, 18
	5		3/16/2023	203602, 26:58-27:02	3168
			5/24/2023	210002, 40:55-41:08, 41:18-41:29	2448
				210002, 40:55-41:41, 43:33-43:56	2748
			5/24/2023	210002	

End Time	Tag	Species
	WHIS, STOC_IRRE	STOC
	WHIS	Strix
	SURV1	STOCrecording
64, 2076	STOC	STOC
	STOC	STOC
	STOC	STOC
	SURV1?+STOC	STOC
	STOC	STOC
	STOC	STOC
	STOC	STOC
36, 1848	STOC	STOC
	STOC	STOC
	STOCF	STOC
	SURV1	

Audio Type (Call, Song, Distress, etc.,)	Review Type	Comments
Starts with one whistle and 14 barking segments	Listening/scanning	Possibly a SURV1
three consecutive WHIS's; possibly SURV1?	Listening/scanning	Possibly a SURV1
three four-note calls, oddly spaced	Scanning	possibly voice calls?
two four-note calls	Scanning	possibly voice calls?
very faint three-note	Listening	vehicle noise
one three-note, one four-note	Listening/scanning	
one four-note	Scanning	spaced out notes; possibly v
two four-note calls	Scanning	spaced out notes; possibly v
one four-note, two four-notes	Scanning	spaced out notes; possibly v
two four-note calls followed by a short series call and later a	Scanning	spaced out notes; possibly v
faint three note	Scanning	
distant female four-note, one four-note sandwiched by two V	Scanning	
three three-notes, spaced out	Scanning	Possibly female SURV1

Validation Initials
LKC
LKC
LKC
LKC
LKC
LKC
LKC
LKC
LKC
oice hoots?
oice hoots?

Contractor Inspections--Blue&Gold						
Spooner Ridge	LKC	07/25/24	SPN-3	SM mini #11 (SMA05334)	463191	4816526
Yellow Creek	LKC	07/25/24	YEL-6	SM mini #13 (SMA05335)	463717	4816970
Lower Thistle Creek	LKC	07/25/24	LTC-1	SM mini #16 (SMA05357)	462968	4831682
Thistleburn Creek	LKC	07/25/24	THC-8	SM mini #8 (SMA05328)	464183	4831698
Flagler Creek	4506-08	31-Jul-24	FLG-8	SM mini#11 (SMA05334)	471141	4824251
Rice Flat	1987-02	31-Jul-24	RIF-2	SM mini #9 (SMA05395)	470166	4823013
Blackberry Canyon	6-5	31-Jul-24	BLB-5	SM mini #5 (SMA05391)	472928	4822677
Blackberry Canyon	6-10	1-Aug-24	BLB-10	SM mini #5 (SMA05391)	473011	4823447
Blackberry Canyon	6-2	1-Aug-24	BLB-2	SM mini #13 (SMA05335)	472434	4823157
Lane Creek		19-Aug-24	LAN-4	SM mini #9 (SMA05395)	488182	4822957
Lane Creek		19-Aug-24	LAN-7	SM mini#13 (SMA05335)	489145	4821989
Lane Creek		19-Aug-24	LAN-8	SM mini #16 (SMA05357)	488507	4822296
Ben Valley		20-Aug-24	BEN-8	SM mini #9 (SMA05395)	485548	4818875
Ben Valley		20-Aug-24	BEN-7	SM mini#13 (SMA05335)	485019	4818481
Ben Valley		20-Aug-24	BEN-7A	SM mini #16 (SMA05357)	487206	4818274

	RR					
	L OO QQ					
recorded 8/1, surveyed 8/2	UU	Hike-in station Flagler	5-Aug-24			
	ZZ		5-Aug-24			
	P	Road station	5-Aug-24			
	P	Hike-in station, up on ridge actual station lower on ridge at E 473056 N 4823360 by CC\				
	TT	Road station before hike-in	5-Aug-24			
	XX	station 2102-04				
	YY					
	EE					
Reploy from LAN-4	XX					
Reploy from LAN-7	YY					
7A, downhill from Hamer station	EE					

N

0819_190900-0821_230602
0819_190900-0821_230602
0819_190900-0821_230602

Blackberry Canyon: MSNO-station 1916-10, -05 and -02 Blue and Gold EA

Contractor Inspection 2024 field season

Core Walk 03/14 by UNDERWOOD and BAXTER, details of core walk include "each covering a portion of NRF"

Visit 1 *Incomplete* 03/20 by MARSHALL 1916-10 first survey point of the night

Visit 1 COMPLETE 03/25 by VACA

Visit 2 *Incomplete* 05/29 by BAXTER 1916-10 first survey point of the night

Visit 2 COMPLETE 05/31 by WYATT

Visit 3 COMPLETE 06/14 by WYATT 1916-10 first survey point of the night

Visit 4 COMPLETE 07/17 by BAXTER 1916-10 first survey point of the night

Visit 5 COMPLETE 08/02 by WYATT 1916-10 first survey point of the night. Station relocated to proper survey point E 473062 N 482350 by WYATT, incorrectly surveyed on ridgetop at E 470501, N 4787120 V1-4. Distance between locations is 68 meters.

Visit 6 COMPLETE 08/14 by WYATT 1916-10 third survey point of the night

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SURVEYOR INSPECTION 7/31-08/02

Purpose: to verify surveys performed at station location 1916-10, 02

07/31 Surveyor changes schedule and did not survey the site or station 1916-05 where ARU was located, no recordings

1916-10 WYATT records on data card survey time at 0004-0014, NR, trail walk-in to original point

1916-10 (ARU location) detects surveyor broadcasting calls from 00:04:02 to 00:13:20, saw-whet, tropical bird, tone at 00:14:37

1916-02 WYATT records on data card survey time at 0048-0058, NR, road station

1916-02 (ARU location) detects surveyor broadcasting calls from 00:47:56 to saw-whet, tropical bird, and tone at 00:57:54

(ARU location) detects the tone for survey at 1916-11 at 02:17:30, survey time 0207-0217

(ARU location) detects at 02:21:20 female 3-note broadcasted at station 1916-06 (0220-0230). Distance between 1916-02 and -06 is 1382 meters.

Rice Flat: MSNO-station 1987-04, -05 Blue and Gold EA

Contractor Inspection 2024 field season

Visit 1 *Incomplete* 3/25 by MARSHALL Day activity center search and night survey of one call point. Coordinates of day search noted on data card and draw points to Mill Marsh in East Elk. Difficult to trach approach to core walk.

> Marshall records: "CORE WALK PARTIAL VISIT / SPOT CHECK PARTIAL VISIT ------- ^^Called 001 @ 1726 / 10T 489993 E 4817966 N / 119 E / 2270 ft / Mid Slope / mid habitat - NR ^^Called 002 @ 1757 / 10t 489972 E 4817667 N / 107 E / 2250 ft / Mid slope / mid habitat – NR"

Visit 1 *Incomplete* 3/25 by VACA Night survey

Visit 1 COMPLETE by MARSHALL 3/27 one survey point recorded

CORE SEARCH 4/01 by VACA No notes on activity center search route. Second day search, first search performed by Marshall on 3/25.

Visit 2 COMPLETE 5/27 & 5/28 by WYATT and D'AGROSO

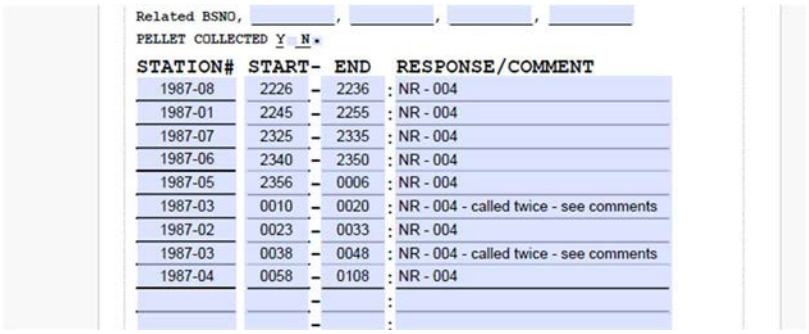
Visit 3 *Incomplete* 6/13 by WYATT

Visit 3 COMPLETE 6/15 by WYATT

Visit 4 COMPLETE 7/16 by D'AGROSO and WYATT

Visit 5 COMPLETE 7/31 by WYATT

> "1987-03: originally called CP at 0010 to 0020. Did not check time when caller tone went off. Drove to 1987-02 and stopped to move some more rocks from rock slide. On starting 1987-02, the time to drive to the CP and move rocks seemed too short to have done a full 10 minutes at 1987-03. Returned to -03 and called for a full 10 minutes to ensure that the CP received full coverage. Likely did not re-set caller when I unmuted the speaker during the original CP time."
>
> Called twice 1987-03 0010-020, 0038-0048



Related BSNO, _____, _____, _____, _____
PELLET COLLECTED Y N

STATION#	START-	END	RESPONSE/COMMENT
1987-08	2226	2236	NR - 004
1987-01	2245	2255	NR - 004
1987-07	2325	2335	NR - 004
1987-06	2340	2350	NR - 004
1987-05	2356	0006	NR - 004
1987-03	0010	0020	NR - 004 - called twice - see comments
1987-02	0023	0033	NR - 004
1987-03	0038	0048	NR - 004 - called twice - see comments
1987-04	0058	0108	NR - 004

Visit 6 COMPLETE 8/14 by WYATT

SURVEYOR INSPECTION 7/30-08/02

Purpose: to verify surveys performed at station location 1987-02

Picked up inspection data 8/02??

1987-04 (0058-0008)

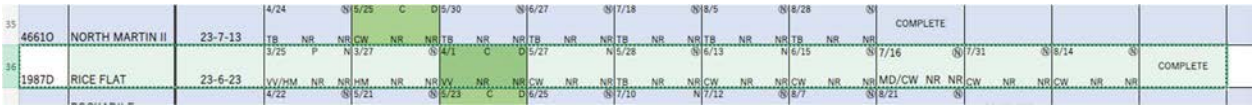
1987-05 (2356-0006)

ARU detects surveyor broadcasting calls from 23:59:04 to 00:01:38 (station 1987-05) VERY faint survey probably ended later, could not hear, Tone heard at 00:05:28

**Inspection effort started 7/30/2024, included inspection of road, rocks obstructing road between 1987-02 going west just around the bend on the downslope. Notes taken by WYATT are confounding with the order of call points, not sequential in terms of where the rocks were located and what call points were already called.

Rice Flat – rock slide, appreciate noting the conditions of the road and the time it took to remove the rock slide and resurveying two points which may or may not have been completed properly

Originally this is what the Tally Sheet looked like:



Sites called with multiple surveyors need to compile data together or separately?

Yellow creek: station 0391-06, -08 Blue and Gold EA

Contractor Inspection 2024 field season

Visit 1 COMPLETE, 04/01 by HM

Visit 2 COMPLETE, 5/07 by HM

Visit 3 COMPLETE, 6/05 by CCW

Visit 4 COMPLETE, 07/02 by CCW

Comments: station -08 calls above 0391-06. Rather 0391-08 needs to be relocated more eastward on decommissioned road 24-6-6.1 to target habitat in section T24S-06W sec 05, qs SW, ss SW.

Move station to E 470501, N 4787122 to call into T24S-R06W-section 05